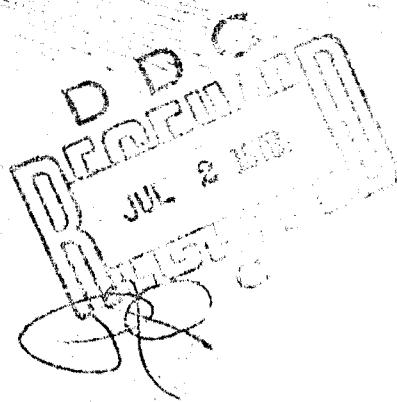
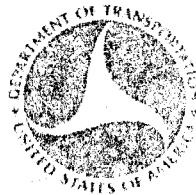
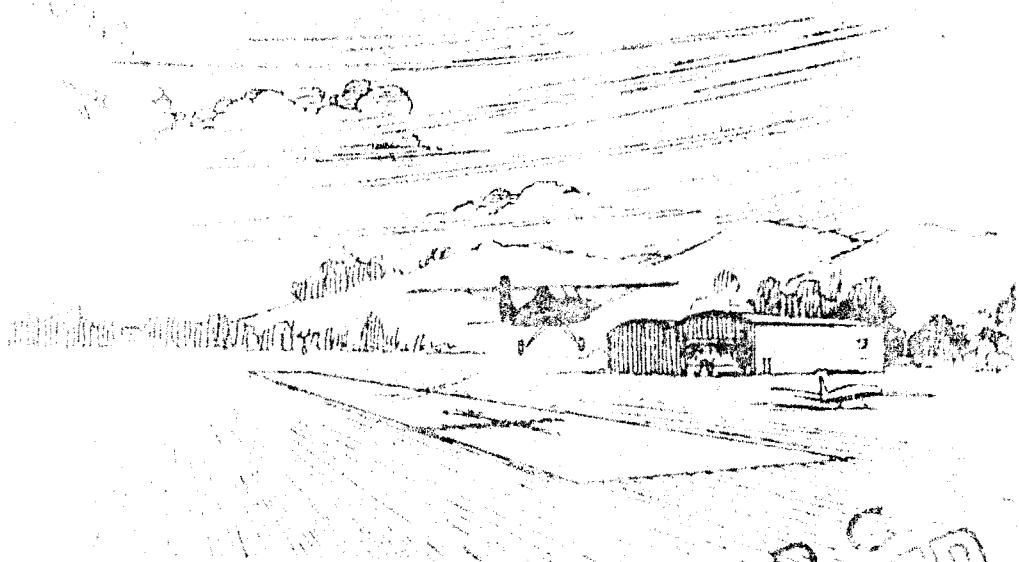


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1977 GENERAL AVIATION ACTIVITY AND AVIONICS SURVEY



APRIL 1979
ANNUAL SUMMARY REPORT

Prepared by
Research and Special Programs Administration
Transportation Systems Center
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Statistical Information Reporting Branch
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Prepared for
U.S. DEPARTMENT OF TRANSPORTATION
Federal Aviation Administration
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Washington DC 20590

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16. Abstract <p>This report presents the results and a description of the 1977 General Aviation Activity and Avionics Survey. The survey was conducted during early 1978 by the FAA to obtain information on the activity and avionics of the United States registered general aviation aircraft fleet, the dominant component of civil aviation in the U.S. The survey was based on a statistically selected sample of about 14.4 percent of the general aviation fleet and obtained a response rate of 80 percent.</p>			
<p>Survey results revealed that during 1977 an estimated 35.8 million hours of flying time were logged by the 184,294 active general aviation aircraft in the U.S. fleet, yielding a mean annual flight time per aircraft of 194.2 hours. The active aircraft represented almost 87 percent of the registered general aviation fleet.</p>			
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METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

When You Know	Symbol	Length	Area	Mass (weight)	Volume	Temperature (degrees)
feet	'	2.54 centimeters	0.093 square meters	0.28 kilograms	0.001 liters	0.56 degrees Celsius
inches	"	2.54 centimeters	0.093 square meters	0.28 kilograms	0.001 liters	0.56 degrees Celsius
yards	''	2.54 centimeters	0.093 square meters	0.28 kilograms	0.001 liters	0.56 degrees Celsius
miles	'"	2.54 centimeters	0.093 square meters	0.28 kilograms	0.001 liters	0.56 degrees Celsius

Approximate Conversions from Metric Measures

When You Know	Symbol	Length	Area	Mass (weight)	Volume	Temperature (degrees)
millimeters	'	0.039 inches	0.001 square meters	0.00028 kilograms	0.000001 liters	0.00056 degrees Celsius
centimeters	"	0.39 inches	0.001 square meters	0.028 kilograms	0.0001 liters	0.056 degrees Celsius
meters	''	3.28 feet	0.001 square meters	1.00 kilograms	0.001 liters	0.56 degrees Celsius
kilometers	'"	0.62 miles	0.001 square kilometers	1,000 kilograms	1 liter	56 degrees Celsius

PREFACE

This report presents the 1977 General Aviation Activity and Avionics Survey results compiled at the Transportation Systems Center (TSC) under Project Plan Agreement FA-943 sponsored by the Federal Aviation Administration (FAA), Office of Management Systems, Information and Statistics Division. The survey is the continuation of an FAA data collection program to gain information on the activities and avionics equipment of the general aviation aircraft fleet. The results represent the cumulative effort of several agencies within the Department of Transportation. TSC developed the survey method, sample design and computer system for sample selection, data editing and estimation of results. They also ran the system during survey production. Within the FAA, the Information and Statistics Division sponsored and coordinated the activities associated with the survey, the Data Systems Management Division was responsible for printing names, addresses and aircraft information on the questionnaires, and the Mike Monroney Aeronautical Center provided data tapes, conducted the telephone follow-up survey, and transferred the survey responses to machine readable forms.

The author would like to acknowledge contributions to this report by several FAA and TSC personnel: Carolyn Edwards and Nicholas Soldo, AMS-230, guided the project as sponsors and reviewed the report text; Neil Meltzer, DTS-233, provided assistance in coordinating the report editing, typing, artwork and printing. Thomas Cramer of Kentron International Limited designed and programmed the entire computer system for the survey. He was assisted on several of the final report programs by James Guarante and Fred Doten, also of Kentron.

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EXECUTIVE SUMMARY

This report presents the results of the first General Aviation Activity and Avionics Survey, conducted in 1978 by the Federal Aviation Administration to obtain information on the activities and avionics of the 1977 general aviation aircraft fleet, the major component of civil aviation in the United States. The FAA selected a statistically designed sample of about 14.4 percent of the registered general aviation fleet to participate in the survey. The sampled aircraft represented all states and FAA regions, and all of the major manufacturer - model groups of aircraft. The survey was conducted through a mailed questionnaire, with a telephone follow-up survey of a sample of non-respondents, yielding in total a response rate of 80 percent.

Some important survey findings appear below:

- o An estimated 35.8 million hours of flying time were logged by the 184,294 active general aviation aircraft in the U.S. fleet during 1977. These aircraft had a mean annual flight time per aircraft of 194.2 hours and represented almost 87 percent of the registered general aviation fleet.
- o Turboprop and turbojet aircraft were the most heavily used aircraft in the fleet, each averaging over 500 hours per aircraft for the year. In contrast, single engine piston powered aircraft averaged fewer than 175 hours per aircraft in 1977.
- o The most common primary use of a general aviation aircraft was personal for an estimated 48 percent of the active fleet, followed by business for 22 percent of the fleet, and instructional for 9 percent of the fleet.
- o The most populous region in terms of based aircraft was the Great Lakes Region, housing an estimated 18 percent of all registered general aviation aircraft; the most populous state was California, housing 13 percent of the registered aircraft.

- o Over 80 percent of the general aviation aircraft have two-way VHF communications equipment; over 50 percent are equipped with 4096-code transponders; almost 50 percent have at least one component of an instrument landing system; and over 75 percent have some form of navigation equipment.
- o An estimated 35 percent of the active general aviation fleet flew by instrument flight rules (IFR) at some time during 1977.
- o An estimated 6.1 percent of the general aviation fleet was on long-term lease during 1977.

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1. INTRODUCTION

1.1 GENERAL

1.1.1 Purpose of Survey

The purpose of the General Aviation Activity and Avionics Survey is to provide the Federal Aviation Administration (FAA) with information on the activity and avionics of the general aviation fleet. Figure 1.1 underscores the importance of general aviation to the United States civil air fleet. During calendar year 1977 general aviation composed almost 99 percent of the U.S. civil air fleet¹, accounted for over 84 percent of civil operations at FAA towered airports², and logged over 84 percent of the total hours flown by the U.S. civil air fleet.³ The information obtained from the survey enables the FAA to monitor the general aviation fleet so that it can, among other activities, anticipate and meet demand for National Airspace System facilities and services, assess the impact of regulatory changes on the general aviation fleet, and implement measures to assure the safe operation in the airspace of all aircraft.

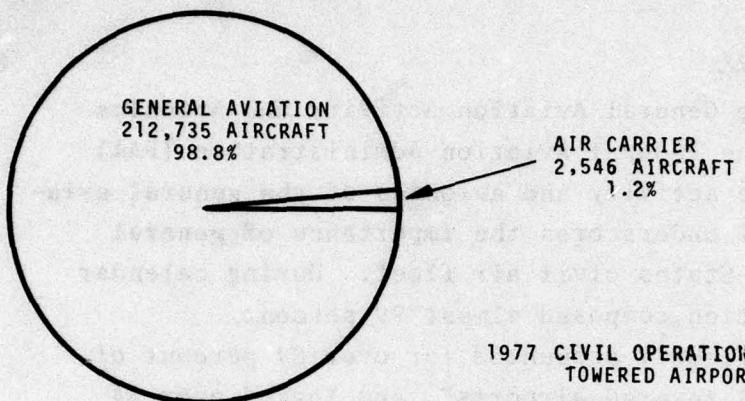
¹Census of U.S. Civil Aircraft, Calendar Year 1977, U.S. Department of Transportation, Federal Aviation Administration, (Washington, DC, 1979), p. 4.

²FAA Air Traffic Activity, Calendar Year 1977, U.S. Department of Transportation, Federal Aviation Administration, (Washington, DC, 1978), p. 2.

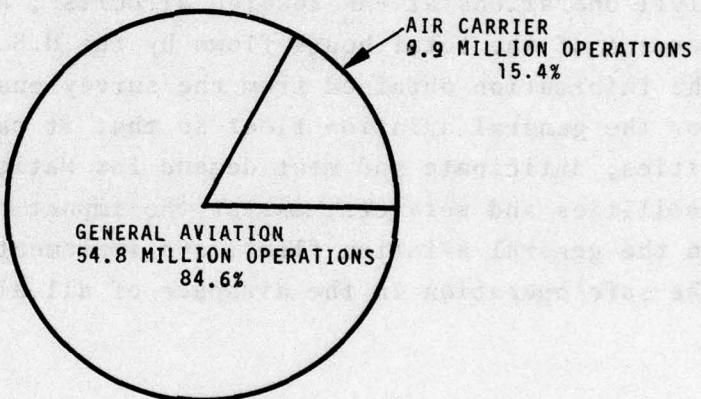
Note: General aviation as used in this report combines both general aviation and air taxi from the source above.

³Air Carrier: Census of U.S. Civil Aircraft Calendar Year 1977, U.S. Department of Transportation, Federal Aviation Administration, (Washington, DC, 1979), p. 30. General Aviation: Table 2-1.

1977 U.S. CIVIL AIR FLEET



1977 CIVIL OPERATIONS AT FAA
TOWERED AIRPORTS



1977 FLYING TIME

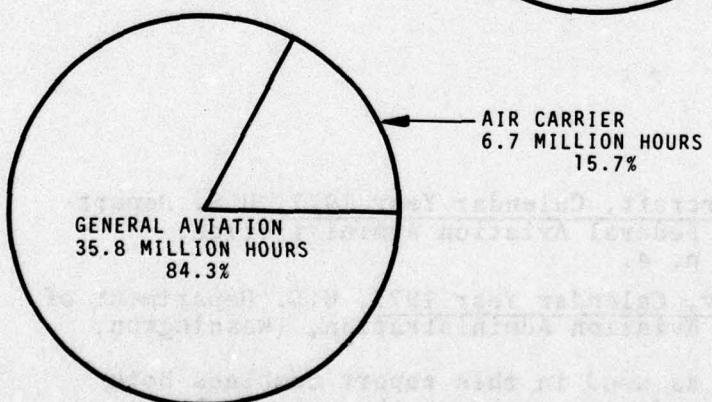


FIGURE 1.1 A CONTRAST OF GENERAL AVIATION AND AIR CARRIER ACTIVITY

1.1.2 Background

Prior to the current survey, the FAA used the Aircraft Registration Eligibility, Identification and Activity Report, AC Form 8050-73 in its data collection program on general aviation activity and avionics. The form, sent annually to all owners of civil aircraft in the U.S., served two purposes: (1) Part 1 was the mandatory aircraft registration renewal form; (2) Part 2 was voluntary and applied to general aviation aircraft only, asking questions on the owner-discretionary characteristics of the aircraft such as flight hours, avionics equipment, base location, and use. In 1978, the FAA replaced AC Form 8050-73 with a new system: Part 1 was replaced by a triennial registration program; Part 2 was replaced by the General Aviation Activity and Avionics Survey, FAA Form 1800-54. (See Appendix A3.) The survey was to be conducted annually based on a statistically selected sample of general aviation aircraft, requesting the same type of information as Part 2 of AC Form 8050-73. The first General Aviation Activity and Avionics Survey took place in 1978, collecting the 1977 data from which the statistics in this report were derived. Benefits resulting from the new method of data collection included quicker processing of the results, improved data quality, and a considerable savings in time and money to both the public and the Federal Government. Specifically, the public reporting burden was reduced by an estimated 13,000 hours annually, and the cost savings to the public and Government were estimated to be one million dollars annually.

1.2 SURVEY COVERAGE

1.2.1 Aircraft

The General Aviation Activity and Avionics Survey covers, through a stratified probability sample, all general aviation aircraft registered in the United States. The term "general aviation", as used for this survey, is defined as all aircraft in the U.S. civil air fleet except those operated under Federal Aviation Regulations Parts 121 and 127. These two parts cover the

operations of fixed wing aircraft and rotorcraft, respectively, that 1) have been issued a certificate of public convenience and necessity by the Civil Aeronautics Board authorizing the performance of scheduled air transportation over specified routes and a limited amount of non-scheduled operations, and 2) are used by large aircraft commercial operators. General aviation thus includes aircraft operated under:

- Part 91: General operating and flight rules.
- Part 123: Certification and operations: air travel clubs using large airplanes.
- Part 133: Rotorcraft external load operations.
- Part 135: Air taxi operators and commercial operators of small aircraft.
- Part 137: Agricultural aircraft operations.

General aviation offers such varied services as air taxi, air cargo, industrial, agricultural, business, personal, instructional, research, patrol and sport flying. General aviation aircraft range in complexity from simple gliders and balloons to four engine turbojets.

Certain aircraft meeting the general aviation criteria have been excluded from the survey. This group consists of aircraft registered to dealers, aircraft in the process of being sold or with registration pending, and aircraft for which not enough information was available to categorize them properly for sampling purposes.

1.2.2 Geographic

The sample survey covers general aviation aircraft registered with the United States Aircraft Registry as of December 31, 1977. Over 99 percent of these aircraft are registered to owners living in the 50 states and Washington, D.C., with about 0.3 percent (543 aircraft) registered in Puerto Rico and other U.S. territories,

and 0.2 percent (374 aircraft) registered to owners living in foreign countries.¹

1.2.3 Content

Appendix A3 contains a copy of the survey questionnaire, FAA Form 1800-54. The questionnaire requests the owner to provide information on the sampled aircraft's characteristics and uses for various time periods:

- 1) Hours by use, IFR hours, fuel consumption, and leasing information for entire calendar year 1977,
- 2) Airframe hour reading and state of aircraft base as of December 31, 1977, and
- 3) Avionics equipment currently on board.

1.3 SAMPLE DESIGN

1.3.1 Sample Frame and Size

The Aircraft Registration Master File, maintained by the FAA Mike Monroney Aeronautical Center in Oklahoma City, provided the sample frame, the list of aircraft from which the sample was selected, for the survey. This file is the official record of registered civil aircraft in the U.S., containing one record per aircraft. It accurately represents the current civil air fleet, being updated continuously for new registrations, changes in ownership, etc.

All aircraft identified as general aviation in the file according to the definition in Section 1.2.1 comprise the sample frame with the following exceptions:

- 1) Aircraft registered to dealers.
- 2) Aircraft with "Sale Reported" or "Registration Pending" appearing in the record instead of the owner's name.
- 3) Aircraft with a known inaccurate owner's address.

¹Source: FAA Aircraft Registration Master File as of December 31, 1977.

4) Aircraft with missing state of registration, aircraft make-model-series code, or aircraft type information.

For calendar year 1977, the sample frame consisted of 212,598 general aviation aircraft records from which 30,643 records were sampled, yielding a 14.4 percent sample. Table 1-1 and Figure 1.2 show the distribution of the sample compared to that of the population by aircraft type. Table 1-2 and Figure 1.3 show similar distributions by FAA region. (See Appendix B for the FAA regional map.) These displays clearly demonstrate the disproportionality of the sample to the population, an intended result of the sample design to gain efficiency and to control errors.

1.3.2 Description of Sample Design

The sample design employed was a stratified, systematic design from a random start. The sample was selected from a two-way stratified frame matrix. The two stratification criteria were:

- 1) State or territory of aircraft registration.
- 2) A variable called make-model index constructed from the thirteen aircraft types and the 300+ aircraft manufacturer/model groups of 20 or more general aviation aircraft.

The 54 levels of the state criterion and the 337 levels of the make-model index yielded a matrix of 54 by 337, or 18,198 cells (strata) among which the frame was divided for sampling.

The FAA's primary requirement was for estimates of mean annual flight hours per aircraft, necessitating optimal determination of sample sizes based on flight hour variation within the cells, and not on cell size. Hence, the sample was not proportional to cell size, and a sampling fraction was determined for each cell with a non-zero population. Sampling was then performed systematically from a random start within individual cells.

Initially, each aircraft in the sample was given a weight which was the inverse of its cell's sampling fraction, and which corresponded to the number of aircraft in the sample frame represented by that aircraft. When all responses to the survey were

TABLE 1-1. SAMPLE AND POPULATION DISTRIBUTIONS BY AIRCRAFT TYPE

Type	Population	Sample Size	Sample as % of Population
Fixed Wing			
Piston			
1 Engine, 1-3 seats	74,455	13,709	18.4
1 Engine, 4 + seats	98,191	8,150	8.3
2 Engines, 1-6 seats	15,690	2,118	13.5
2 Engines, 7 + seats	7,161	1,654	23.1
Other Piston	353	235	66.6
Turboprop			
2 Engines, 1-12 seats	2,295	345	15.0
2 Engines, 13 + seats	581	110	18.9
Other turboprop	98	85	86.7
Turbojet			
2 Engines	1,995	499	25.0
Other	499	310	62.1
Rotorcraft			
Piston	4,652	1,486	31.9
Turbine	2,193	438	20.0
Other	4,435	1,504	33.9
TOTAL	212,598	30,643	14.4

TABLE 1-2. SAMPLE AND POPULATION DISTRIBUTIONS BY REGION OF REGISTERED AIRCRAFT

Region	Approximate Population	Sample Size	Sample as % of Population
Alaska	5,865	756	12.9
Central	15,650	2,457	15.7
Eastern	22,536	4,430	19.7
European (Foreign)	373	171	45.8
Great Lakes	38,272	3,818	10.0
New England	7,594	3,263	43.0
Northwestern	13,960	1,774	12.7
Pacific	539	342	63.5
Rocky Mountain	12,066	2,907	24.1
Southern	33,748	5,241	15.5
Southwestern	28,548	3,147	11.0
Western	33,447	2,337	7.0
TOTAL	212,598	30,643	14.4

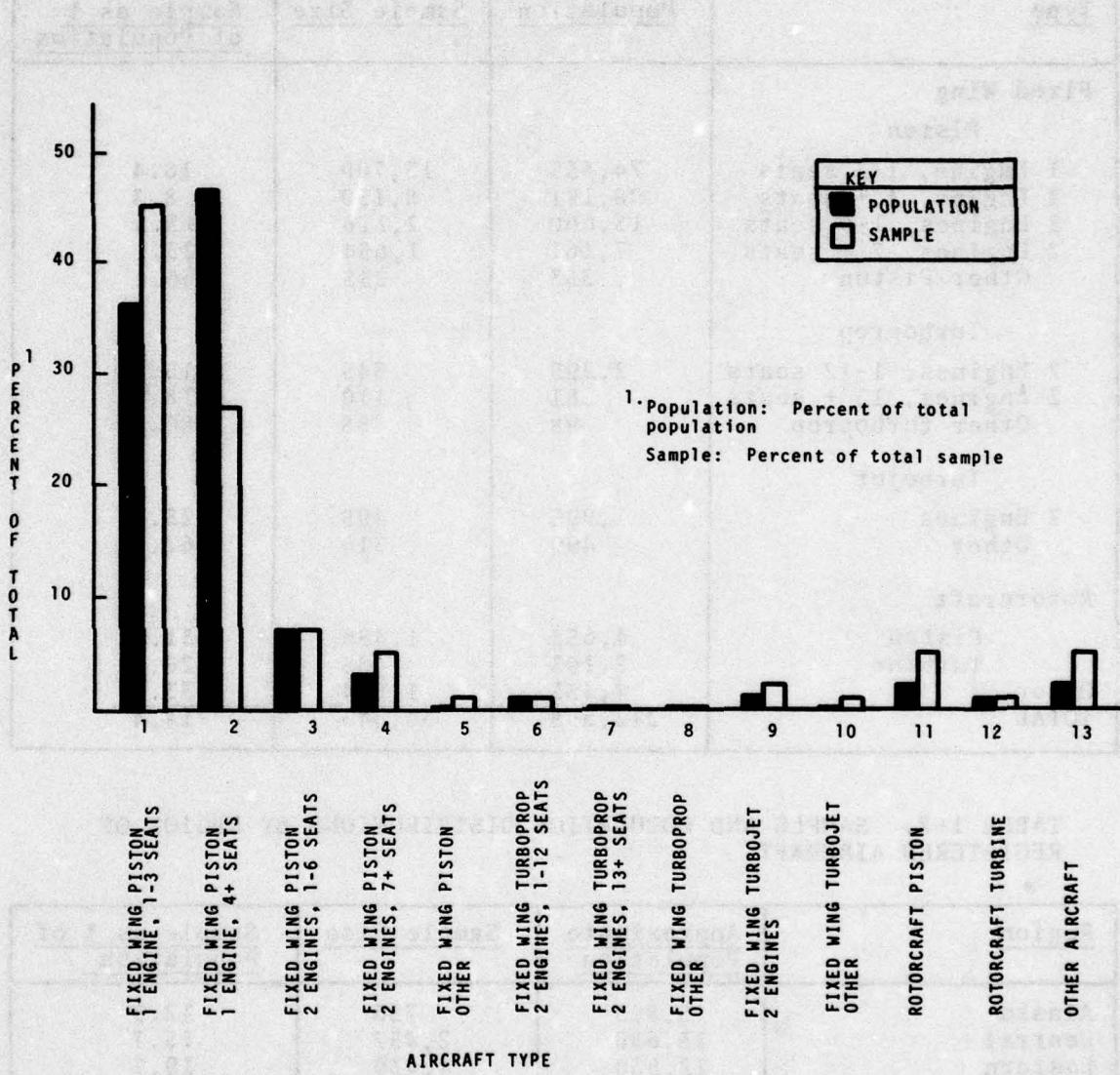
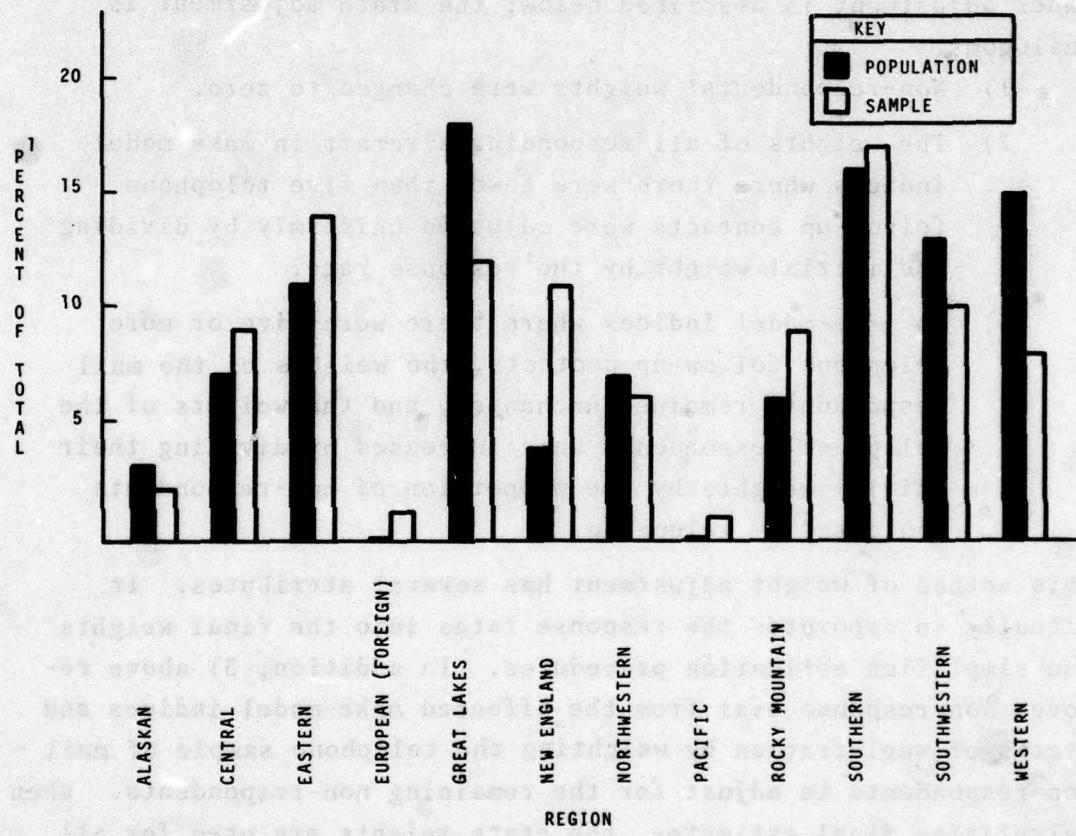


FIGURE 1.2 COMPARISON OF POPULATION AND SAMPLE DISTRIBUTIONS BY AIRCRAFT TYPE



1. Population: Percent of total population.
- Sample: Percent of total sample.

FIGURE 1.3 COMPARISON OF POPULATION AND SAMPLE DISTRIBUTIONS BY REGION OF REGISTERED AIRCRAFT

tallied, each weight was adjusted in two ways: one, according to the response rate for the aircraft's make-model index, and the other according to the response rate for the aircraft's state of registration, counting an aircraft for which no survey questions were answered as a non-respondent and an aircraft for which at least one question was answered as a respondent. The make-model index adjustment is described below; the state adjustment is analogous.

- 1) Non-respondents' weights were changed to zero.
- 2) The weights of all responding aircraft in make-model indices where there were fewer than five telephone follow-up contacts were adjusted uniformly by dividing the initial weight by the response rate.
- 3) In make-model indices where there were five or more telephone follow-up contacts, the weights of the mail respondents remained unchanged, and the weights of the telephone respondents were increased by dividing their initial weights by the proportion of non-respondents contacted by telephone.

This method of weight adjustment has several attributes. It actually incorporates the response rates into the final weights and simplifies estimation procedures. In addition, 3) above removes non-response bias from the affected make-model indices and states of registration by weighting the telephone sample of mail non-respondents to adjust for the remaining non-respondents. When calculating final estimates, the state weights are used for all state and regional estimates, the make-model index weights for all other estimates.

1.3.3 Error

Errors associated with estimates derived from sample survey results fall into two categories: sampling and non-sampling errors.¹ Sampling errors occur because the estimates are based on

¹ Standards for Discussion and Presentation of Errors in Data, U.S. Department of Commerce, Bureau of the Census, (Washington, DC., 1974), pp. II-14.

a sample — not the entire population. Non-sampling errors arise from a number of sources such as non-response, inability or unwillingness of respondents to provide correct information, differences in interpretation of questions, mistakes in recording or coding the data obtained, and others. The following sections discuss the two types of errors.

1.3.3.1 Sampling Error - In a designed survey, the sampling error associated with an estimate is generally unknown, but a measurable quantity known as the standard error is often used as a guide to the magnitude of sampling error. The standard error measures the variation which would occur among the estimates from all possible samples from the same population. It thus measures the precision with which an estimate approximates the average result of all possible samples or the result of a survey in which all elements of the population were sampled.

Through sample design techniques, the statistician can control the sizes of standard errors on a few key variables, known as design variables, in the survey. In the General Aviation Activity and Avionics Survey, the design variables were the mean annual hours flown per aircraft by aircraft type, by aircraft manufacturer-model group, and by state of aircraft registration. The sample was designed to produce standard errors on these variables at levels specified by the FAA. No controls were placed on the standard errors of the non-design variables.

Thus, every estimate resulting from a sample survey, whether it be for a design or non-design variable, has sampling error associated with it. The user of survey results must consider this error along with the point estimate itself when making inferences or drawing conclusions about the sample population. A large standard error relative to an estimate indicates lack of precision and, inversely, a small standard error indicates precision. To facilitate the comparison of estimates and their errors, the tables in Section 2 of this publication display standard errors for all estimated quantities. In addition, the percent standard error often appears, which is the standard error divided by the corresponding estimate. The paragraphs below explain the

proper interpretation and use of the errors.

An estimate and its standard error make it possible to construct an interval estimate with prescribed confidence that the interval will include the average value of the estimate from all possible samples of the population. Table 1-3 below shows selected interval widths and their corresponding confidence.

TABLE 1-3. CONFIDENCE OF INTERVAL ESTIMATES

WIDTH OF INTERVAL	APPROXIMATE CONFIDENCE THAT INTERVAL INCLUDES AVERAGE VALUE
1 Standard error	68%
2 Standard errors	95%
3 Standard errors	99%

As an example, from Table 2-1 a 95 percent confidence interval for the number of active rotorcraft with piston engines would be $2658 \pm 2(176)$ or (2306,3010). One would say that the number of active rotorcraft with piston engines lies somewhere between 2306 and 3010 with 95 percent confidence.

1.3.3.2 Non-Sampling Error - Non-sampling error can be reduced through survey design, although the amount of reduction is difficult, if not impossible, to quantify in any given design. Nevertheless, through controlled experiments, various techniques have been identified which limit non-sampling error. Several of these techniques were incorporated into the design of the general aviation survey and are itemized below:

- o The second mailing and telephone survey of a sample of non-respondents were conducted in addition to the original mailing to improve the response rate, since a low response rate is a major cause of non-sampling error. 80 percent of those aircraft sampled responded to at least one ques-

tion of the survey; this compares favorably with the expected response rate of 80 percent used in determining the overall sample size initially. Tables 1-4 and 1-5 show the response rates broken down by FAA region and aircraft type, respectively. The lowest response rate for any region was 50 percent for the European (Foreign) Region due to mail delivery and telephone contact difficulties. The Pacific Region rate was low at 65 percent for similar reasons. These two regions, however, represented less than 0.5 percent of the active U.S. general aviation fleet. Other Turboprop had the lowest response rate at 60 percent of any of the aircraft types, but these aircraft represented less than 0.1 percent of the fleet.

- o The telephone sample of mail non-respondents also helped to minimize bias in results caused by differences in attributes between respondents and non-respondents.
- o The survey questionnaire was designed and tested to minimize misinterpretation of questions by the aircraft owners.
- o To assure the owners of the confidentiality of their responses, the questionnaire cover letter informed them that the intended use of the responses was for "producing summary statistics and not to disclose individual operations nor to make corrections to your aircraft records."¹
- o Comprehensive editing procedures insured the accuracy of the data transcription to machine readable form and the internal consistency of responses.
- o The most accurate source of information on the general aviation fleet, the FAA Aircraft Master File, was used as the sampling frame.

¹See Appendix A1.

TABLE 1-4. RESPONSE RATES BY REGION

Region	Response Rate (%)	Region	Response Rate (%)
Alaskan	71	Pacific	65
Central	81	Rocky Mountain	80
Eastern	82	Southern	79
European (Foreign)	50	Southwestern	78
Great Lakes	83	Western	78
New England	84		
Northwestern	80	TOTAL	80

TABLE 1-5. RESPONSE RATES BY AIRCRAFT TYPE

Aircraft Type	Response Rate (%)	Aircraft Type	Response Rate (%)
Fixed Wing		Turbojet	
Piston			
1 eng. 1-3 seats	82	2 Eng.	82
1 eng. 4 + seats	80	Other	70
2 eng. 1-6 seats	76		
2 eng. 7 + seats	72		
Other	72		
Turboprop		Rotorcraft	
2 eng. 1-12 seats	80	Piston	80
2 eng. 13 + seats	86	Turbine	82
Other	60	Other	81
		TOTAL	80

1.4 SURVEY METHOD

The main method of collecting data for this survey was the mail questionnaire, sent to the owners of the sampled aircraft in two mailings. The first mailing on February 15, 1978, covered all 30,643 aircraft in the sample and had a response rate of 65 percent. This was about 82 percent of the total responses to the survey. The second mailing conducted on March 29, 1978, included only those aircraft in the sample that had not yet responded. The second mailing had a response rate of 35 percent which accounted for 15 percent of the total responses to the survey. The combined response rate for the two mailings was 78 percent of the sample.

A telephone follow-up survey was conducted during May and early June using the same questions appearing in the mail survey. A sample of the mail non-respondents was selected for the telephone survey weighing most heavily those states and make-model groups in the sampling strata that had the lowest mail response rates. Of a total telephone sample of 2289 aircraft, only 741, or 32 percent, responses could be obtained due to difficulty in obtaining telephone numbers, finding owners at home, and obtaining cooperation of owners over the telephone. Nevertheless, the 741 telephone responses contributed the remaining three percent of the responses and increased the overall response rate of the survey to 80 percent. (See Table 1-6.)

1.5 SUMMARY OF SURVEY RESULTS

1.5.1 National Scene

Results of the General Aviation Activity and Avionics Survey at the national level revealed that during 1977 an estimated 35.8 million hours of flying time were logged by the 184,294 active general aviation aircraft in the U.S. fleet, yielding a mean annual flight time per aircraft of 194.2 hours. These active aircraft comprised almost 87 percent of the registered general aviation fleet. The statistics for 1977 showed a 5.5 percent increase in flying hours, a 3.6 percent increase in the number of

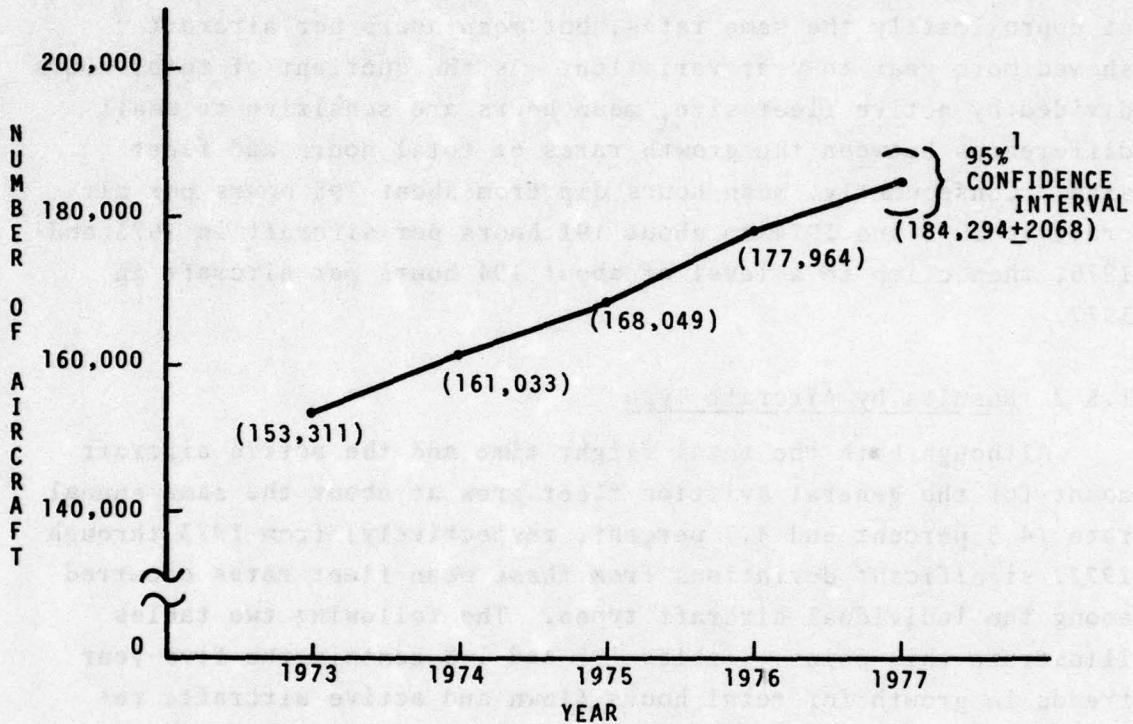
TABLE 1-6 SUMMARY OF RESPONSE INFORMATION BY SURVEY PHASE

SURVEY PHASE	SAMPLE SIZE (S)	NUMBER OF RESPONSES (R)	RESPONSE RATE (R/S x100%)	PORTION OF TOTAL RESPONSE [(R/TOTAL R)X100%]
FIRST MAILING	30,643	20,008	65%	82%
SECOND MAILING	10,641	3,749	35%	15%
COMBINED MAILINGS	30,643	23,751	78%	97%
TELEPHONE SURVEY	2,289	741	32%	3%
TOTAL	30,643	24,498	80%	100%

active aircraft in the general aviation fleet, and a 1.9 percent increase in mean hours per aircraft over the comparable figures for 1976. Longer term trends for these variables are found in Figures 1.4, 1.5 and 1.6. From 1973 to 1977 both the active fleet and the total hours flown exhibited growth trends which increased at approximately the same rates, but mean hours per aircraft showed more year-to-year variation. As the quotient of total hours divided by active fleet size, mean hours are sensitive to small differences between the growth rates of total hours and fleet size. Consequently, mean hours dip from about 195 hours per aircraft in 1973 and 1974 to about 191 hours per aircraft in 1975 and 1976, then climb to a level of about 194 hours per aircraft in 1977.

1.5.2 Results by Aircraft Type

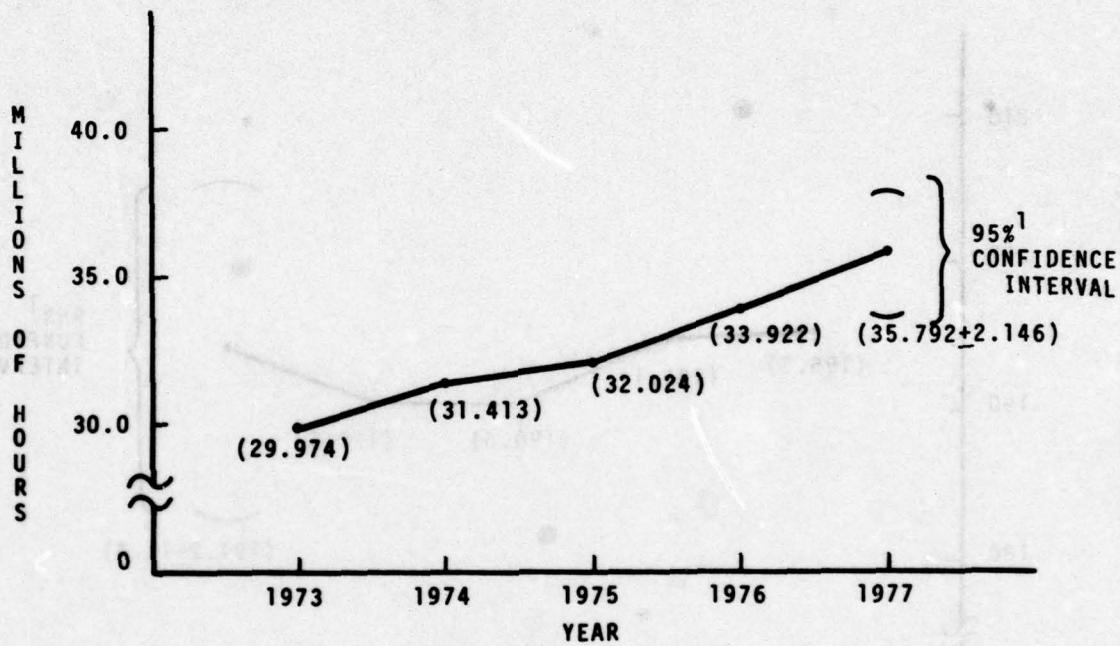
Although both the total flight time and the active aircraft count for the general aviation fleet grew at about the same annual rate (4.5 percent and 4.7 percent, respectively) from 1973 through 1977, significant deviations from these mean fleet rates occurred among the individual aircraft types. The following two tables illustrate this point. Tables 1-7 and 1-8 contain the five-year trends in growth for total hours flown and active aircraft, respectively. The last column in both tables is the compound annual growth rate for the aircraft type from 1973 to 1977. In Table 1-7, the fastest growth of any type in terms of total hours flown occurred to the turbine-powered rotorcraft with an average annual growth rate of 25.04 percent. They were followed by twin engine turbojets at 15.06 percent and twin engine turboprops with 1-12 seats at 11.75 percent. In contrast, single engine piston airplanes with 1-3 seats, piston-powered rotorcraft, and "other" turboprops experienced a decline in usage during the period. In general, it was the larger, more sophisticated aircraft in the general aviation fleet that grew faster than the other components of the fleet. Similar results are shown in Table 1-8 for the active aircraft counts.



1. The estimate plus or minus 2 standard errors forms a 95% confidence interval for the true value. See Section 1.3.3.1.

Source: Table 1-8

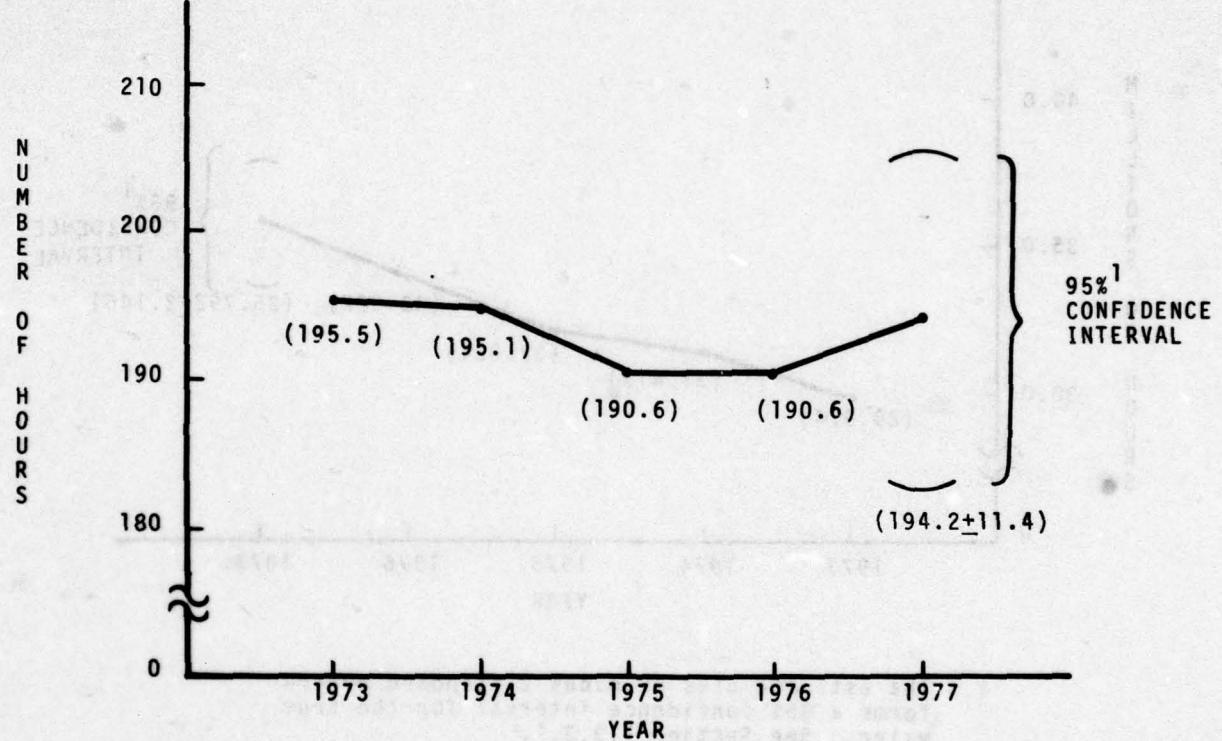
FIGURE 1.4 GENERAL AVIATION ACTIVE FLEET SIZE 1973-1977



1. The estimate plus or minus 2 standard errors forms a 95% confidence interval for the true value. See Section 1.3.3.1.

Source: Table 1-7

FIGURE 1.5 GENERAL AVIATION TOTAL FLYING TIME
1973-1977



1. The estimate plus or minus 2 standard errors forms a 95% confidence interval for the true value. See Section 1.3.3.1.

FIGURE 1.6 MEAN ANNUAL FLYING TIME PER GENERAL AVIATION AIRCRAFT
1973-1977

TABLE 1-7. GROWTH OF GENERAL AVIATION TOTAL HOURS FLOWN BY AIRCRAFT TYPE
 1973 - 1977
 (THOUSANDS OF HOURS)

AIRCRAFT TYPE	<u>1973¹</u>	<u>1974¹</u>	<u>1975¹</u>	<u>1976¹</u>	<u>1977</u> (Standard Error)	COMPOUND ANNUAL GROWTH RATE IN \$
FIXED WING						
1-engine piston 1-3 seats	9,722	9,436	9,447	9,640	8,973 (629)	-1.98
1-engine piston 4 + seats	12,025	12,994	13,467	14,688	15,944 (824)	7.31
2-engine piston 1-6 seats	3,243	3,367	3,374	3,220	3,630 (202)	2.86
2-engine piston 7 + seats	1,724	1,868	1,793	2,081	2,322 (102)	7.73
Other piston	84	95	84	84	96 (5)	3.39
2-engine turboprop 1-12 seats	572	663	787	785	892 (37)	11.75
2-engine turboprop 13 + seats	508	540	484	521	625 (60)	5.32

TABLE 1-7. GROWTH OF GENERAL AVIATION TOTAL HOURS FLOWN BY AIRCRAFT TYPE (CONTINUED)
 1973 - 1977
 (THOUSANDS OF HOURS)

<u>AIRCRAFT TYPE</u>	<u>1973¹</u>	<u>1974¹</u>	<u>1975¹</u>	<u>1976¹</u>	<u>1977</u> (Standard Error)	<u>COMPOUND ANNUAL GROWTH RATE IN \$</u>
Other turboprop	37	42	36	20	32 (5)	-3.56
2-engine turbojet	595	690	755	844	1,043 (49)	15.06
Other turbojet	89	63	71	67	122 (11)	8.20
ROTORCRAFT						
Piston	654	729	686	753	609 (90)	-1.77
Turbine	515	697	796	950	1,259 (93)	25.04
OTHER	207	227	244	270	245 (16)	4.30
TOTAL AIRCRAFT	29,974	31,413	32,024	33,922	35,792 (1,073)	4.53

1. FAA revised data as of December, 1978.

TABLE 1-8. GROWTH OF ACTIVE GENERAL AVIATION FLEET BY AIRCRAFT TYPE
1973 - 1977

<u>AIRCRAFT TYPE</u>	<u>1973¹</u>	<u>1974¹</u>	<u>1975¹</u>	<u>1976¹</u>	<u>1977</u> (Standard Error)	<u>COMPOUND ANNUAL GROWTH RATE IN \$</u>
FIXED WING						
1-engine piston 1-3 seats	51,218	52,682	54,059	56,547	57,340 (851)	2.86
1-engine piston 4 + seats	74,856	78,830	82,580	88,205	91,960 (529)	5.28
2-engine piston 1-6 seats	13,454	14,182	14,663	14,617	15,074 (141)	2.88
2-engine piston 7 + seats	5,048	5,371	5,456	6,494	6,226 (86)	5.38
Other piston	190	190	178	196	182 (11)	-1.07
2-engine turboprop 1-12 seats	1,268	1,465	1,928	1,889	2,276 (15)	15.75
2-engine turboprop 13 + seats	509	555	512	507	549 (13)	1.91

TABLE 1-8. GROWTH OF ACTIVE GENERAL AVIATION FLEET BY AIRCRAFT TYPE (CONTINUED)
1973 - 1977

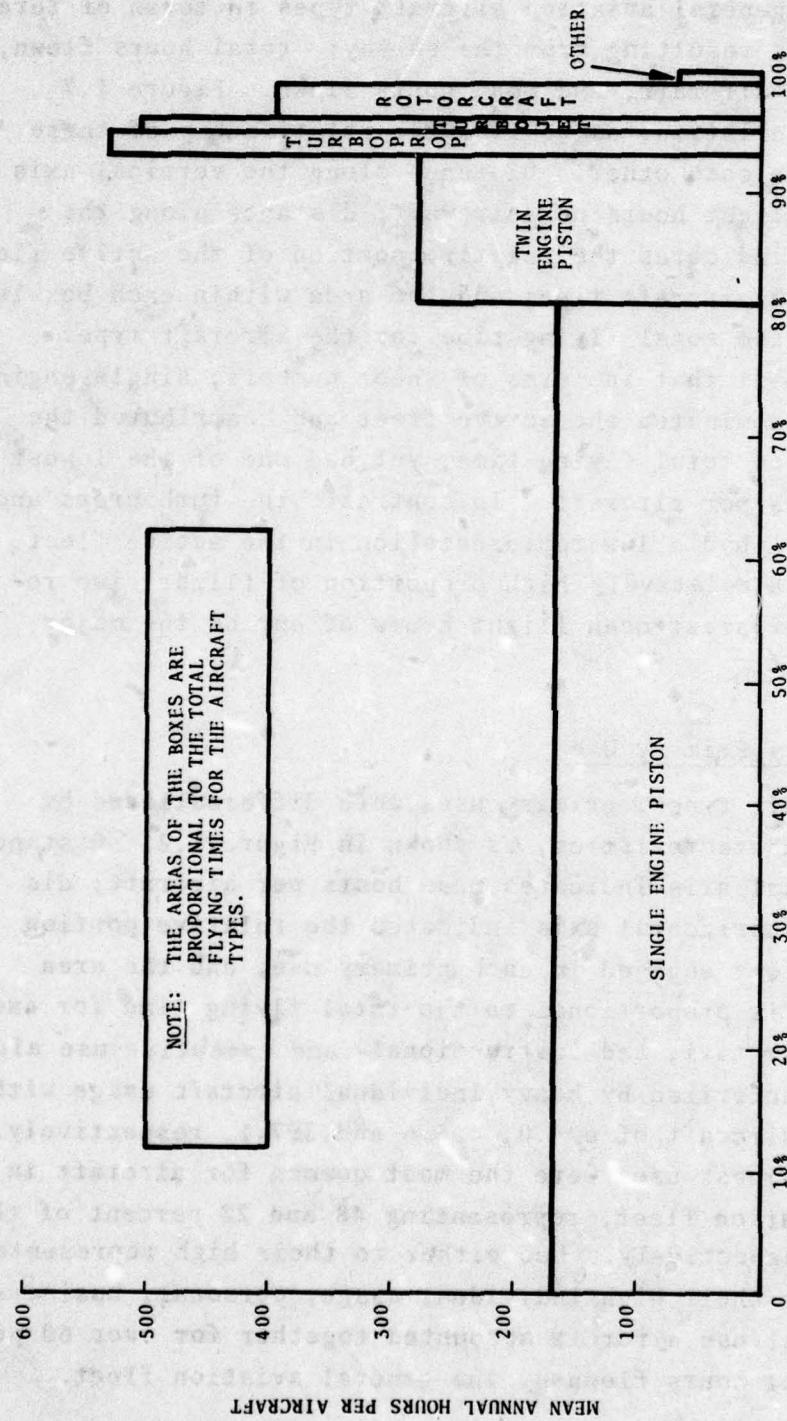
AIRCRAFT TYPE	<u>1973</u> ¹	<u>1974</u> ¹	<u>1975</u> ¹	<u>1976</u> ¹	<u>1977</u> (Standard Error)	COMPOUND ANNUAL GROWTH RATE IN %
Other turboprop	72	75	64	57	64 (4)	-2.90
2-engine turbojet	1,196	1,385	1,547	1,692	1,959 (19)	13.13
Other turbojet	184	176	196	189	318 (10)	14.66
ROTORCRAFT						
Piston	2,122	2,315	2,498	2,701	2,658 (176)	5.79
Turbine	993	1,282	1,556	1,724	2,067 (27)	20.12
OTHER	2,201	2,525	2,812	3,146	3,616 (69)	13.21
TOTAL AIRCRAFT	153,311	161,033	168,049	177,964	184,294 (1,034)	4.71

1. FAA revised data as of December, 1978.

There was a great deal of variation in numbers and activity among the major general aviation aircraft types in terms of three activity measures resulting from the survey: total hours flown, number of active aircraft, and mean hours flown. Figure 1.7 highlights the variation, as well as the relationship of these three measures to each other. Distance along the vertical axis indicates mean flight hours per aircraft; distance along the horizontal axis indicates the relative portion of the active fleet belonging to each aircraft type; and the area within each box is proportional to the total flying time for the aircraft type. Thus, it is evident that in terms of sheer numbers, single engine piston aircraft dominated the active fleet and contributed the largest portion of total flying time, yet had one of the lowest mean flight times per aircraft. In contrast, the turboprops and turbojet aircraft had a low representation in the active fleet and contributed a relatively high proportion of flight time resulting in the greatest mean flight hours of any of the major aircraft types.

1.5.3 Results by Primary Use

Like aircraft types, primary uses were differentiated by their activity characteristics, as shown in Figure 1.8. Distance along the vertical axis indicates mean hours per aircraft; distance along the horizontal axis indicates the relative portion of the active fleet engaged in each primary use; and the area within each box is proportional to the total flying time for each primary use. Air taxi, and instructional- and executive-use aircraft were characterized by heavy individual aircraft usage with mean hours per aircraft of 604.0, 405.6 and 397.1, respectively. Personal and business uses were the most common for aircraft in the general aviation fleet, representing 48 and 22 percent of the active fleet, respectively. Due either to their high representation in the fleet or their high individual usage, personal, business, and instructional-use aircraft accounted together for over 60 percent of the total hours flown by the general aviation fleet.



Source: Table 2-1

FIGURE 1.7. 1977 GENERAL AVIATION ACTIVITY MEASURES BY AIRCRAFT TYPE

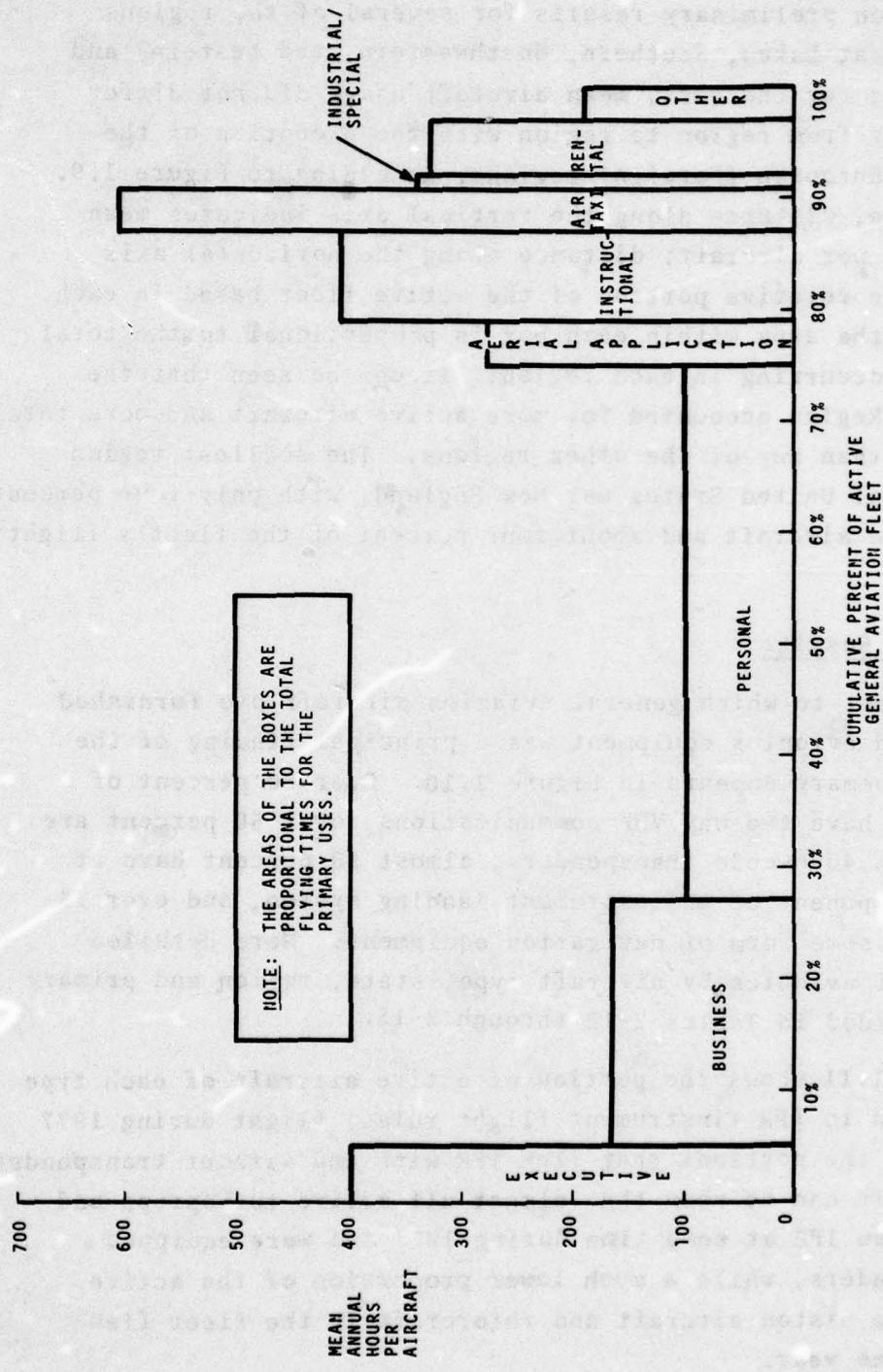


FIGURE 1.8 1977 GENERAL AVIATION ACTIVITY MEASURES BY PRIMARY USE

Source: Tables 2-4 and 2-9

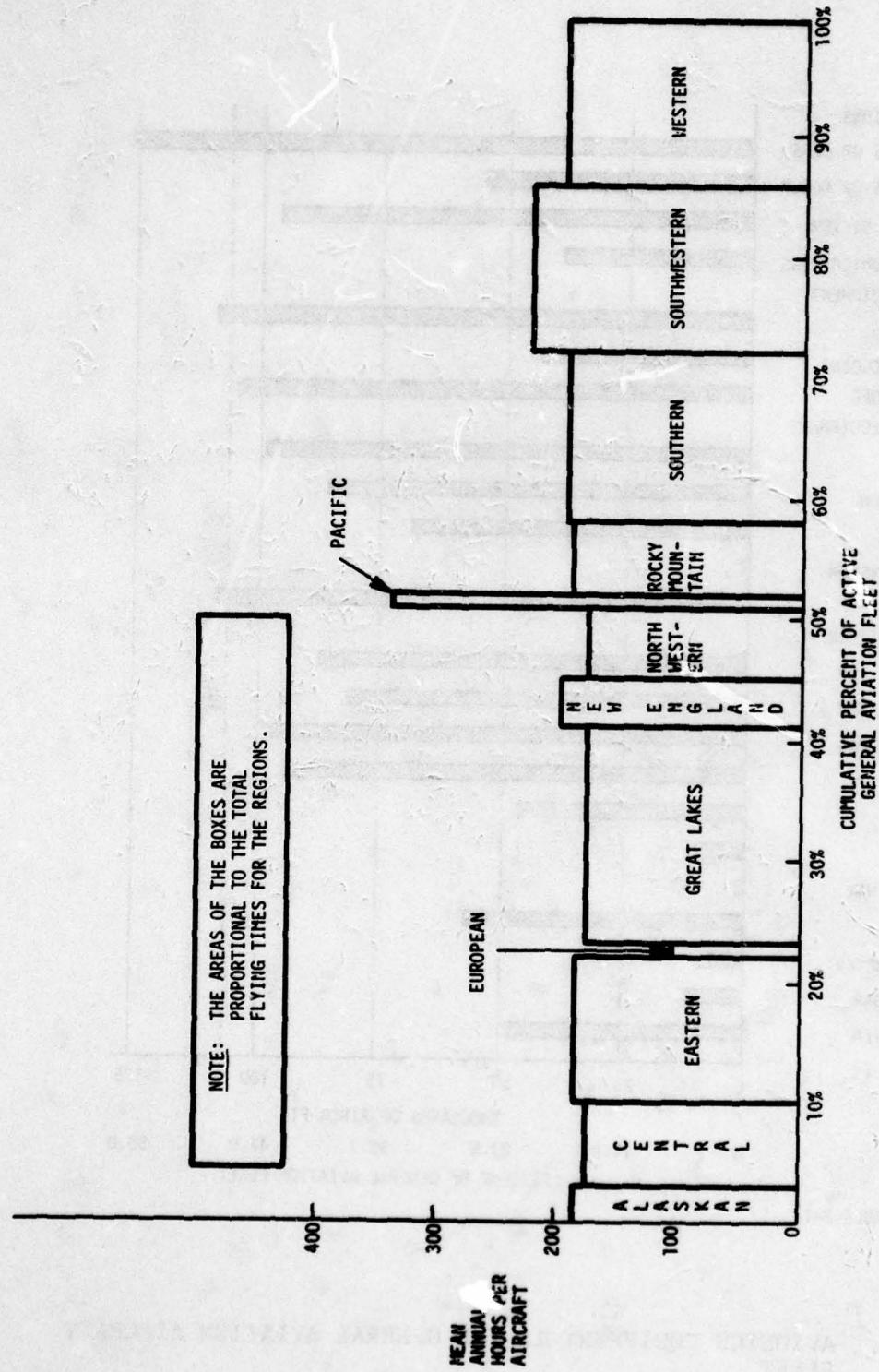
1.5.4 Results by FAA Region

Based on preliminary results for several of the regions (Eastern, Great Lakes, Southern, Southwestern, and Western) and final results for the rest, mean aircraft usage did not differ significantly from region to region with the exception of the Pacific and European (Foreign) regions, according to Figure 1.9. In the Figure, distance along the vertical axis indicates mean annual hours per aircraft; distance along the horizontal axis indicates the relative portion of the active fleet based in each region; and the area within each box is proportional to the total flying time occurring in each region. It can be seen that the Great Lakes Region accounted for more active aircraft and more total flight time than any of the other regions. The smallest region in continental United States was New England, with only four percent of the active aircraft and about four percent of the fleet's flight time.

1.5.5 Other Results

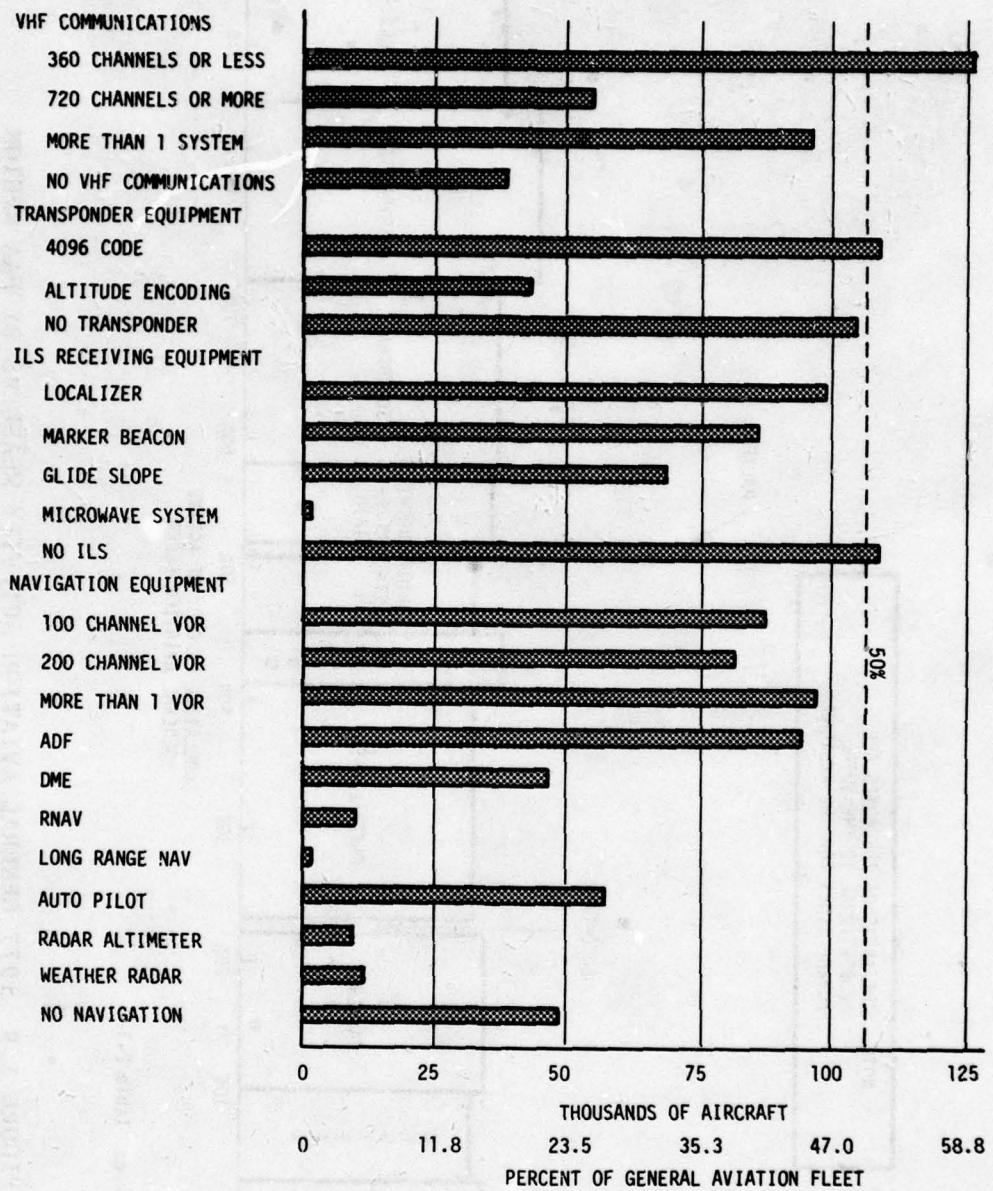
The extent to which general aviation aircraft are furnished with on-board avionics equipment was a principal finding of the survey. A summary appears in Figure 1.10. Over 80 percent of the aircraft have two-way VHF communications, over 50 percent are equipped with 4096-code transponders, almost 50 percent have at least one component of an instrument landing system, and over 75 percent have some form of navigation equipment. More detailed breakdowns of avionics by aircraft type, state, region and primary use are provided in Tables 2-12 through 2-15.

Figure 1.11 shows the portion of active aircraft of each type which engaged in IFR (instrument flight rules) flight during 1977 and further, the portions that flew IFR with and without transponder equipment. It can be seen that almost all active turboprops and turbojets flew IFR at some time during 1977 and were equipped with transponders, while a much lower proportion of the active single engine piston aircraft and rotorcraft in the fleet flew IFR during the year.



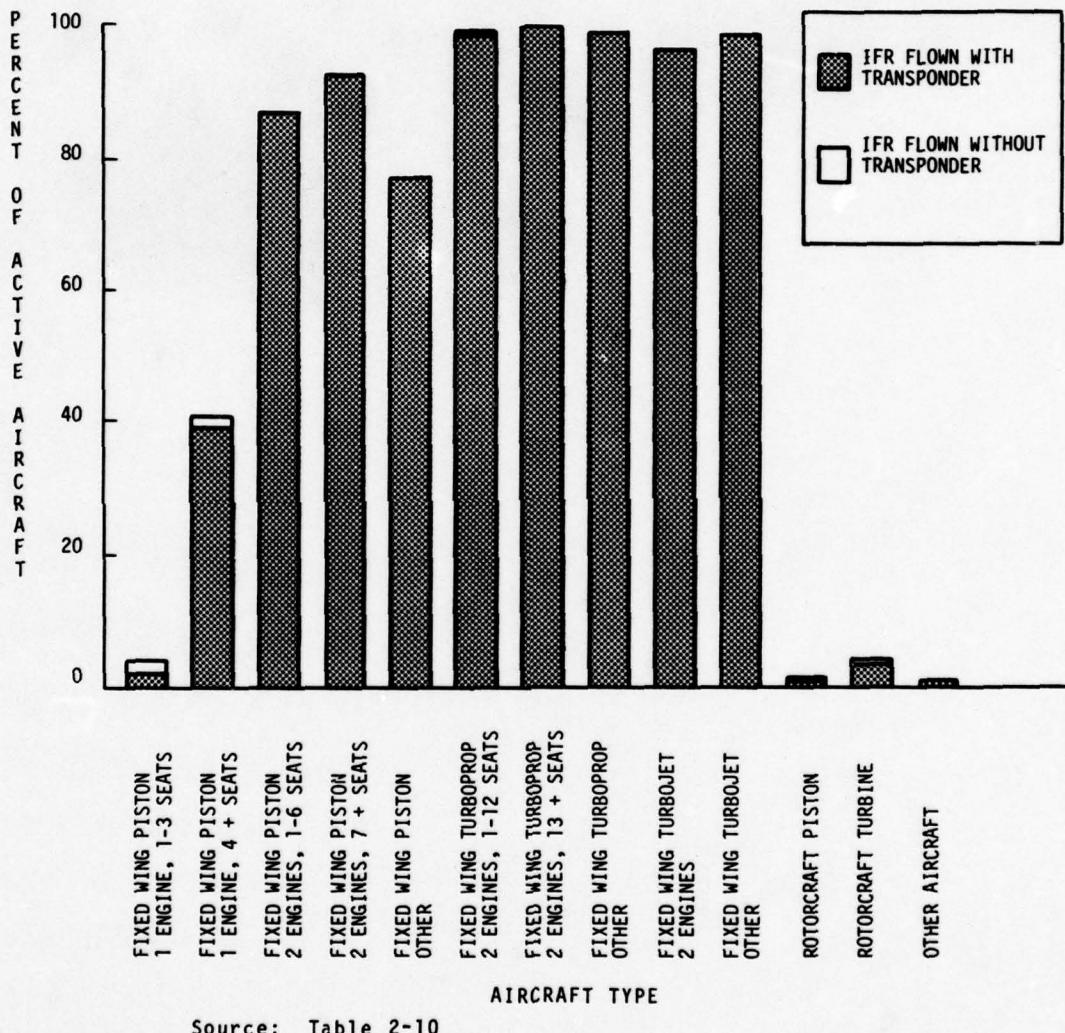
Source: Table 2-3.

FIGURE 1.9 1977 GENERAL AVIATION ACTIVITY MEASURES BY FAA REGION



SOURCE: TABLE 2-13

FIGURE 1.10. AVIONICS EQUIPMENT IN THE GENERAL AVIATION AIRCRAFT FLEET



Source: Table 2-10

FIGURE 1.11. GENERAL AVIATION ACTIVE AIRCRAFT IFR FLOWN AND TRANSPOUNDER EQUIPPED

2. TABLES OF RESULTS

TABLE 2-1. GENERAL AVIATION TOTAL HOURS FLOWN BY TYPE OF AIRCRAFT - CY 1977 (1 of 2)

AIRCRAFT TYPE	POPULATION SIZE	ESTIMATE CP NUMBER ACTIVE	STANDARD ERROR	ESTIMATE OF TOTAL HOURS	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF HRS HOURS	STANDARD ERROR	PERCENT STANDARD ERROR
FIXED WING PISTON									
1 ENG 1-3 SEATS	74455	57340	.851	8972836	629041	7.0	156.3	10.4	6.7
1 ENG 4+ SEATS	98191	91960	.529	15943601	823947	5.2	172.0	8.9	5.1
TOTAL 1 ENG	172646	149300	1002	24616438	1036620	4.2	166.5	6.8	4.1
2 ENG 1-6 SEATS	15690	15074	141	3630265	202296	5.6	241.2	13.3	5.5
2 ENG 7+ SEATS	7161	6226	.86	2321563	102281	4.4	375.9	15.1	4.0
TOTAL 2 ENG	22851	21301	165	5951828	226683	3.8	260.4	10.4	3.7
CHEM PISTON	353	182	11	96473	4932	5.1	528.8	21.3	4.0
TOTAL PISTON	195853	170763	1015	30964739	1061127	3.4	161.3	6.1	3.3
TURBOPROP									
2 ENG 1-12 SEATS	2295	2276	15	692496	37423	4.2	392.8	15.8	4.0
2 ENG 13+ SEATS	581	549	13	624865	59706	9.6	1137.5	106.7	9.4
TOTAL 2 ENG	2876	2825	20	1517361	70465	4.6	538.5	28.0	4.5
CHEM TURBCPROP	98	64	4	31823	4537	14.3	461.9	8.5	1.8
TOTAL TURBCPROP	2974	2890	20	1549184	70611	4.6	533.4	23.5	4.4
TURBOJET									
2 ENG	1995	1959	19	1043204	49148	4.7	527.7	22.4	4.2
CHEM	499	318	10	122024	11300	9.3	385.0	42.2	11.0
TOTAL TURBOJET	2494	2277	22	1165228	50430	4.3	509.0	20.2	4.0
TOTAL FIXED WING	201318	175951	1016	33679153	1064669	3.2	191.3	5.9	3.1
MOTORCRAFT									
PISTON	4652	2658	176	608603	89711	14.7	230.5	29.6	12.9

TABLE 2-1. GENERAL AVIATION TOTAL HOURS FLOWN BY TYPE OF AIRCRAFT - CY 1977 (2 of 2)

AIRCRAFT TYPE	POPULATION SIZE	ESTIMATE OF NUMBER ACTIVE	STANDARD ERROR	ESTIMATE OF TOTAL HOURS	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF MEAN HOURS	STANDARD ERROR	PERCENT STANDARD ERROR
TURBINE	2193	2067	27	1259041	92959	7.4	608.3	44.1	7.2
TOTAL MOTORCRAFT	6845	4726	179	1867684	129188	6.9	396.3	25.5	6.4
OTRIPS	4835	3616	69	244761	16401	6.7	67.6	4.2	6.2
TOTAL AIRCRAFT	212598	184294	1034	35791558	1072604	3.0	194.2	5.7	2.9

TABLE 2-2. GENERAL AVIATION TOTAL HOURS FLOWN BY STATE OF BASED AIRCRAFT-CY 1977 (1 of 3)

STATE	ESTIMATE OF ACTIVE POPULATION	STANDARD ERROR	ESTIMATE OF TOTAL HOURS	STANDARD ERROR HOURS
ALABAMA	2385	580	523865	228861
ALASKA	5130	359	932732	113887
ARIZONA	3700	687	781084	198560
ARKANSAS	2597	507	621672	159139
CALIFORNIA	23344 ^P	1035	4533405 ^P	339112
COLORADO	3697	583	617087	144880
CONNECTICUT	1444	398	375130	153219
DELAWARE	608	230	109293	68764
DC	119	51	50517	25961
FLORIDA	9246 ^P	639	1795573 ^P	187485
GEORGIA	3750	636	574622	110198
HAWAII	541	255	181787	91782
IDaho	2080	495	501317	240910
ILLINOIS	7716 ^P	768	1607243 ^P	378800
INDIANA	4183 ^P	651	812339 ^P	148887
IOWA	3524	635	672581	113832
KANSAS	3894	692	671316	170851
KENTUCKY	1365	804	267723	76825
LOUISIANA	3350	510	1163837	200511
MAINE	1050	343	166180	66798
MARYLAND	2464	539	619747	126667

P : PRELIMINARY RESULT

TABLE 2-2. GENERAL AVIATION TOTAL HOURS FLOWN BY STATE OF BASED AIRCRAFT-CY 1977 (2 of 3)

STATE	ESTIMATE OF ACTIVE POPULATION	STANDARD ERROR	ESTIMATE OF TOTAL HOURS	STANDARD ERROR
MASSACHUSETTS	2663	546	459976	125556
MICHIGAN	6816	940	1196306	351956
MINNESOTA	4122	696	503355	125118
MISSISSIPPI	1695	442	419162	102543
MISSOURI	3905	707	750559	303999
MONTANA	2230	428	39303	103144
NEBRASKA	2341	442	482332	151116
NEVADA	1491	369	302396	108992
NEW HAMPSHIRE	993	332	160495	77450
NEW JERSEY	6060	730	632227	217003
NEW MEXICO	1747	364	198750	45214
NEW YORK	6092 ^P	468	1183066 ^P	123896 ^P
NORTH CAROLINA	3717	673	591035	127379
NORTH DAKOTA	1508	385	265966	126923
OHIO	6978	879	1173998	262204
OKLAHOMA	3827	643	665880	136873
OREGON	4266	669	626608	246975
PENNSYLVANIA	5310	832	949011	266305
PUERTO RICO	299	183	65003	97668
RALEIGH ISLAND				
SOUTH CAROLINA	1485	421	293062	86618
SOUTH DAKOTA	1298	361	244039	90460
TEXAS	2607	563	561352	157797
TEXAS	14355 ^P	776	3107857 ^P	413230
UTAH	1406	423	300863	103692
VERMONT	386	204	74223	83132
VIRGINIA	2296	523	388459	107931

P : PRELIMINARY RESULT

TABLE 2-2. GENERAL AVIATION TOTAL HOURS FLOWN BY STATE OF BASED AIRCRAFT-CY 1977 (3 of 3)

STATE	ESTIMATE OF ACTIVE POPULATION	STANDARD ERROR	ESTIMATE OF TOTAL HOURS	STANDARD ERROR HOURS
WASHINGTON	4995	560	652964	145927
WEST VIRGINIA	965	324	144994	49537
WISCONSIN	3519	636	561544	168999
WYOMING	1176	306	266814	96539
Puerto Rico	404	219	132824	49443
Other U.S. Territories	137	113	58411	55173
FOREIGN	234	150	40157	32471
TOTAL	184294	1034	35791558	1072664

NOTE : COLUMN SUMMATIONS MAY DIFFER FROM PRINTED TOTALS DUE TO ESTIMATION PROCEDURES.

TABLE 2-3. GENERAL AVIATION TOTAL HOURS FLOWN BY REGION OF BASED AIRCRAFT-CY 1977

REGION	ESTIMATE OF ACTIVE POPULATION	STANDARD ERROR	ESTIMATE OF TOTAL HOURS	STANDARD ERROR
ALASKAN	5130	359	932732	113487
CENTRAL	13666	1206	2392770	411828
EASTERN	21940 ^P	1406	4088512 ^P	397561
EUROPEAN	101	70	10518	9033
GREAT LAKES	33337 ^P	1697	5907324 ^P	718466
NEW ENGLAND	6633	856	1316283	213245
NORTHWESTERN	11372	986	2012303	420259
PACIFIC	573	259	191064	91863
ROCKY MOUNTAIN	11118	1005	2122172	255637
SCUSHIPEN	27685 ^P	1490	5238293 ^P	392903
SOUTHWESTERN	25880 ^P	1234	5839998 ^P	599470
WESTERN	28336 ^P	1256	5639694 ^P	495594
TOTAL	184294	1036	35791558	1072604

NOTE : COLUMN SUMMATIONS MAY DIFFER FROM PRINTED TOTALS DUE TO ESTIMATION PROCEDURES

P : PRELIMINARY RESULT

TABLE 2-4. GENERAL AVIATION TOTAL HOURS FLOWN BY AIRCRAFT TYPE AND PRIMARY USE - CY 1977
(1 of 3)

AIRCRAFT TYPE	TOTAL	EXECUTIVE	BUSINESS	PERSONAL	AERIAL APPL.	INSTRUCT- TIONAL	AIR TAXI	INDUS- TRIAL	RENTAL	OTHER
PISTON WING										
PISTON										
1 ENG 1-3 SEATS										
EST. 107. HOURS	8972836	28676	442365	2590066	1785739	3255164	12553	76061	503180	308729
X STD. ENROR	7.0	92.0	64.1	7.0	6.8	19.4	86.4	27.6	34.5	25.9
1 ENG 4+ SEATS										
EST. 107. HOURS	15943601	408120	4244432	5213623	17105	2707890	1032252	182549	1963162	137260
X STD. ENROR	5.2	36.6	10.7	6.7	53.2	20.4	40.2	23.2		24.6
TOTAL 1 ENG										
EST. 107. HOURS	24916830	436426	4686982	7811963	1802225	5965167	1048876	258698	2668896	350709
X STD. ENROR	4.2	34.5	11.4	5.0	6.8	14.1	20.3	27.0	19.6	20.4
2 ENG 1-6 SEATS										
EST. 107. HOURS	3630265	662960	13866012	425990	13877	217349	744633	7208	99315	69419
X STD. ENROR	5.6	14.8	11.3	14.7	56.4	33.4	19.8	109.6	42.7	31.6
2 ENG 7+ SEATS										
EST. 107. HOURS	2321563	749561	406953	54354	32661	21816	910707	16125	60832	69925
X STD. ENROR	4.4	11.5	11.7	22.0	33.8	43.7	10.3	36.6	31.5	21.3
TOTAL 2 ENG										
EST. 107. HOURS	5951828	1413259	1793041	480389	46699	239101	1654938	23292	160386	139335
X STD. ENROR	3.8	9.4	9.2	13.2	35.0	30.0	11.4	39.8	28.8	19.3
OTHER PISTON										
EST. 107. HOURS	96473	860	2453	32	8103	0	68556	0	15059	916
X STD. ENROR	5.1	89.7	36.3	43.4	17.2	0.0	7.2	0.0	25.7	40.5
TOTAL PISTON										
EST. 107. HOURS	30964739	1089398	6484257	8292180	1055904	6202866	2767812	282268	2686155	492070
X STD. ENROR	3.4	10.7	8.8	4.8	6.6	13.5	10.4	24.9	18.4	16.4
TRANSOPAC										
2 ENG 1-12 SEATS										
EST. 107. HOURS	892496	698872	94318	5486	0.0	0.0	7159	79921	0.0	6514
X STD. ENROR	4.2	6.1	16.8	61.1			78.3	27.9	0.0	76.7
										69.3
										1976

TABLE 2-4. GENERAL AVIATION TOTAL HOURS FLOWN BY AIRCRAFT TYPE AND PRIMARY USE - CY 1977
(2 of 3)

AIRCRAFT TYPE	TOTAL	EXECUTIVE	BUSINESS	PERSONAL	AERIAL APPL.	INSTRUCTIONAL	AIR TAXI	INDUS- TRIAL	RENTAL	OTHER
2 ENG 13+ SEATS										
EST. TOT. HOURS	624865	102370	12061	659	0.0	0.0	387723	1747	71573	9581
% STD. ERROR	9.6	20.3	70.6	58.7	0.0	0.0	15.3	154.6	67.3	70.7
TOTAL 2 ENG										
EST. TOT. HOURS	1517361	800989	106380	6145	0.0	7159	451958	1747	77975	11326
% STD. ERROR	4.6	5.9	18.5	54.6	0.0	78.3	15.7	154.6	53.2	53.1
OTHER TURBOPRCP										
EST. TOT. HOURS	31823	3055	5877	0.0	0.0	62.7	0.0	0.0	31.0	19.8
% STD. ERROR	14.3	32.8	37.7	0.0	0.0	62.7	0.0	0.0	31.0	19.8
TOTAL TURBOCP										
EST. TOT. HOURS	1549184	804048	112371	6145	0.0	7222	453730	1747	92979	17326
% STD. ERROR	4.6	5.9	18.0	54.6	0.0	70.0	15.6	154.6	40.3	37.4
TURBOJET										
2 ENG										
EST. TOT. HOURS	1043204	661165	33292	1838	2263	55326	213883	3661	0.0	53477
% STD. ERROR	4.7	5.8	30.3	63.9	69.7	50.4	18.8	56.4	0.0	45.6
OTHER										
EST. TOT. HOURS	122024	50793	19727	163	0.0	89.9	3864	8137	0.0	14745
% STD. ERROR	9.3	21.2	35.6	47.8	0.0	89.9	30.0	30.0	0.0	19.4
TOTAL TURBOJET										
EST. TOT. HOURS	1165228	711950	53019	2000	2263	59530	222002	3661	14745	19337
% STD. ERROR	4.3	5.6	22.7	45.6	69.7	46.8	18.0	56.4	19.4	32.3
TOTAL FIXED WING										
EST. TOT. HOURS	33679153	3367276	6650506	8300328	1858171	6269739	3430334	287680	2751781	579857
% STD. ERROR	3.2	6.4	8.6	4.8	6.6	13.4	9.2	24.3	18.1	15.1
ACROBATIC										
PISTON										
EST. TOT. HOURS	608603	7869	99647	23212	174670	36768	38093	71882	2785	150116
% STD. ERROR	14.7	86.1	34.6	20.9	37.2	44.8	56.9	81.7	145.2	38.4
TURBINE										
EST. TOT. HOURS	1259041	112439	58306	779	27075	171555	659611	93569	8786	128937
% STD. ERROR	7.4	35.8	47.8	111.1	24.7	52.3	17.6	43.5	74.6	30.0

TABLE 2-4. GENERAL AVIATION TOTAL HOURS FLOWN BY AIRCRAFT TYPE AND PRIMARY USE - CY 1977
(3 of 3)

AIRCRAFT TYPE	TOTAL	EXECUTIVE	BUSINESS	PERSONAL	AERIAL APPL	INSTRUCT- IONAL	AIR TAXI	INDUS- TRIAL	RENTAL	OTHER
TOTAL AIRCRAFT EST. TOT. HOURS \$ SID. EFFECT	186744 6.9	120263 33.4	157814 28.3	23986 20.6	201385 33.2	207682 34.4	697539 16.9	165092 30.1	11487 66.6	275050 23.2
OTHER EST. TOT. HOURS \$ SID. EFFECT	244761 6.7	1016 102	11656 17.4	130150 6.8	0.0 0.0	51076 16.8	105 125.7	108.6 13	30198 24.2	21105 48.1
TOTAL AIRCRAFT EST. TOT. HOURS \$ SID. EFFECT	35791558 3.0	3487388 4.5	6821792 7.2	8453116 3.9	2057547 6.0	6529100 7.6	4130267 4.4	453399 9.6	2792799 9.8	879118 10.6

NOTE : ROW AND COLUMN SUMMATIONS MAY DIFFER FROM PRINTED TOTALS DUE TO ESTIMATION PROCEDURES.

TABLE 2-5. GENERAL AVIATION ANNUAL HOURS BY SDR AIRCRAFT MANUFACTURER/MODEL GROUP - CY 1977 (1 of 14)

MANUFACTURE/MODEL GROUP	GROUP SIZE	ESTIMATE OF TOTAL HOURS	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF MEAN HOURS	STANDARD ERROR	PERCENT STANDARD ERROR
OTHER 01	780	220032	37976	17.3	44.7	7.0	15.7
CTHEF 02	1236	87206	10693	12.3	130.9	11.4	8.7
CTHEF 03	301	22585	1846	8.2	143.7	9.5	6.6
CTHEF 04	175	26039	2922	11.2	315.8	28.3	9.0
OTHEF 05	66	6181	1865	30.2	202.2	34.6	17.1
OTHER 06	346	161155	14233	8.8	465.8	41.1	8.8
OTHER 07	196	58946	16718	28.4	673.1	174.7	26.0
CTHER 08	44	9301	2152	23.1	305.3	65.9	21.6
CTHER 09	201	75209	9707	12.9	382.0	48.4	12.7
CTHER 10	144	5123	1625	31.7	81.9	23.6	28.8
CTHEF 11	1376	41963	5660	13.5	100.5	11.7	11.6
OTHER 12	180	62766	8547	13.6	450.6	55.2	12.2
OTHEF 13	1550	60421	10297	17.0	53.1	8.8	16.5
AERCSESA316	50	25558	3799	14.9	511.2	76.0	14.9
AERCSESA341	55	22493	2487	11.1	409.0	45.2	11.1
AIRPTSA	290	31831	3889	12.2	149.0	14.6	9.8
AIRSPC19	24	411	115	27.8	36.4	8.8	24.1
AIRSPCAT360	91	266687	4120	15.4	329.5	50.9	15.4
AMD FAIC19	90	39964	5578	14.0	499.5	69.7	14.0
AMD FAIC20	187	182683	28033	15.3	976.9	149.9	15.3
ARCTICS14	91	2894	657	22.7	74.2	15.2	20.6

NOTE: See following page for coding.

NOTE: Other XX refers to all general aviation aircraft belonging to manufacturer/model groups of fewer than 20 aircraft in size for aircraft XX where XX stands for

- 01 Fixed wing piston, 1 engine, 1-3 seats.
- 02 Fixed wing piston, 1 engine, 4+ seats.
- 03 Fixed wing piston, 2 engines, 1-6 seats.
- 04 Fixed wing piston, 2 engines, 7+ seats.
- 05 Fixed wing piston, other.
- 06 Fixed wing turboprop, 2 engines, 1-12 seats.
- 07 Fixed wing turboprop, 2 engines, 13+ seats.
- 08 Fixed wing turboprop, other.
- 09 Fixed wing turbojet, 2 engines.
- 10 Fixed wing turbojet, other.
- 11 Rotorcraft, piston.
- 12 Rotorcraft, turbine.
- 13 Other aircraft.

TABLE 2-5. GENERAL AVIATION ANNUAL HOURS BY SDR AIRCRAFT MANUFACTURER/MODEL GROUP - CY
1977 (2 of 14)

MANUFACTURER/MODEL GROUP	GROUP SIZE	ESTIMATE OF TOTAL HOURS	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF Mean HOURS	STANDARD ERROR	PERCENT STANDARD ERROR
ARCTICS 1B1	23	230	6.1	26.6	28.3	5.9	20.7
AROMA 15	206	10749	1333	12.4	73.3	8.2	11.2
AROMA 58	162	2888	867	30.0	36.1	9.1	25.2
AROMA 65	139	3960	1066	26.9	60.3	12.2	20.3
AROMAC 3	49	466	126	27.1	22.5	2.0	8.7
AYRES S2	789	235796	23761	10.1	322.6	31.9	9.9
BAC 111	29	13222	943	7.1	456.0	32.5	7.1
BALKE'S FISHERY	225	9869	1084	11.0	46.5	4.6	10.0
BEAGLE B206	27	2814	951	33.8	173.7	33.3	19.2
BEECH 100	173	72260	8138	11.3	417.7	47.0	11.3
BEECH 17	191	4995	1463	29.3	62.2	10.1	16.3
BEECH 18	1148	404425	43306	10.7	468.0	43.5	9.3
BEECH 200	207	76811	12551	16.3	393.6	57.8	14.7
BEECH 23	2453	553563	106504	19.2	248.3	44.9	18.0
BEECH 33	1464	263905	25756	9.8	161.3	17.7	9.8
BEECH 35	6809	947211	90180	9.5	148.6	13.3	9.0
BEECH 36	857	171141	24617	18.4	199.7	26.7	14.4
BEECH 45	321	41360	4048	9.8	187.3	13.7	9.3
BEECH 50	366	60179	5096	8.5	178.1	16.3	8.2
BEECH 55	1966	421505	40327	9.6	218.9	20.5	9.5
BEECH 56	66	9167	1874	20.4	138.9	20.4	20.4

TABLE 2-5. GENERAL AVIATION ANNUAL HOURS BY SDR AIRCRAFT MANUFACTURER/MODEL GROUP - CY
1977 (3 of 14)

MANUFACTURER/MODEL GROUP	GROUP SIZE	ESTIMATE OF TOTAL HOURS	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF MEAN HOURS	STANDARD ERROR	PERCENT STANDARD ERROR
BEECH 58	714	245142	25668	10.6	343.3	36.2	10.6
BEECH 60	294	69428	18490	26.6	236.1	62.9	26.6
BEECH 65	179	73990	19642	26.8	413.4	110.9	26.8
BEECH 80	241	50531	5241	10.4	240.3	20.3	8.4
BEECH 90	474	188020	20362	10.8	398.4	42.8	10.7
BEECH 95	492	83322	10699	12.8	172.1	21.9	12.7
BEECH 99	108	185969	33323	17.9	1771.0	284.5	16.1
BELL 204	99	6885	368	5.3	98.9	4.9	5.0
BELL 205	61	33767	4312	12.8	553.6	70.7	12.8
BELL 206	1093	833759	90037	10.8	767.9	81.6	10.6
BELL 212	83	86792	10771	12.4	1045.7	129.8	12.4
BELL 47	1535	257227	81078	31.5	241.8	66.7	27.6
ELANCA11	949	32917	3030	9.2	54.9	4.4	8.0
ELANCA1413	296	7682	2383	31.0	60.6	17.4	28.6
ELANCA1619	300	20510	1976	9.6	79.6	7.0	8.8
ELANCA17	937	138766	145336	10.5	149.4	15.4	10.3
ELANCA7	5751	406546	34073	8.4	87.1	6.8	7.9
ELANCA8	424	43356	5904	13.4	102.3	13.7	13.4
BHORN BH2	69	78335	16708	21.3	1183.1	217.4	18.4
BCBING707	19	9685	3433	35.4	679.7	216.5	31.9
BOEING720	20	7720	1541	20.0	471.8	82.7	17.5

TABLE 2-5. GENERAL AVIATION ANNUAL HOURS BY SDR AIRCRAFT MANUFACTURER/MODEL GROUP - CY
1977 (4 of 14)

MANUFACTURER/MODEL GROUP	GROUP SIZE	ESTIMATE OF TOTAL HOURS	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF MEAN HOURS	STANDARD ERROR	PERCENT STANDARD ERROR
BOEING 727	58	31619	7452	23.6	636.9	133.1	20.9
BOEING 75	2026	132059	21679	16.4	152.9	21.3	13.9
BOEING 817	22	1223	687	56.2	77.9	38.5	44.3
BOLKNS 105	57	40875	4244	10.4	716.5	78.4	10.4
PAWS FLEET 2	31	407	81	19.8	46.4	5.7	12.8
PAWS FLEET 7	22	546	81	14.9	67.3	7.9	11.8
CAMRC MODELC	38	1788	412	23.0	47.0	10.8	23.0
CESSNA 20	926	34075	7127	20.9	47.5	8.7	18.4
CESSNA 40	2516	123720	11594	9.4	61.2	5.2	8.5
CESSNA 150	16525	3625528	581162	16.0	238.6	36.7	15.4
CESSNA 170	2588	187999	25698	13.6	77.9	10.3	13.3
CESSNA 172	19631	3098416	605814	19.6	159.0	31.0	19.5
CESSNA 175	1430	91517	9370	10.2	72.6	7.0	9.6
CESSNA 177	2852	687278	159515	23.2	241.2	56.0	23.2
CESSNA 180	2505	377096	42422	11.2	161.8	17.6	10.9
CESSNA 182	10916	1620364	233162	14.4	153.0	21.8	14.2
CESSNA 185	1115	265332	36830	13.9	260.7	32.9	13.6
CESSNA 188	1659	583073	98457	16.9	384.6	60.1	15.6
CESSNA 190	88	5138	315	6.1	76.9	4.0	5.4
CESSNA 195	502	22001	3806	17.0	76.2	6.2	8.1
CESSNA 205	263	36362	4777	13.1	144.9	18.4	12.7

TABLE 2-5. GENERAL AVIATION ANNUAL HOURS BY SDR AIRCRAFT MANUFACTURER/MODEL GROUP - CY
1977 (5 of 14)

MANUFACTURER/ACMODEL GROUP	GRUP SIZE	ESTIMATE OF TOTAL HOURS	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF MEAN HOURS	STANDARD ERROR	PERCENT STANDARD ERROR
CESSNA206	2122	484790	85630	17.6	231.6	40.5	17.5
CESSNA207	159	98045	16715	17.0	616.6	105.1	17.0
CESSNA210	3971	877810	183918	21.0	226.6	46.9	20.7
CESSNA305	243	32577	5844	17.9	182.3	27.1	16.9
CESSNA310	2997	669163	78986	11.8	226.8	26.4	11.6
CESSNA320	370	79870	9987	12.5	222.4	25.5	11.5
CESSNA336	102	11296	1530	13.5	122.6	16.0	13.1
CESSNA337	1182	255682	49665	19.4	219.0	42.2	19.3
CESSNA340	468	105609	16734	15.8	225.7	35.8	15.8
CESSNA401	254	78689	9229	11.7	312.0	36.2	11.6
CESSNA402	447	215773	34630	15.8	514.0	78.4	15.3
CESSNA404	44	11378	1972	17.3	267.8	45.9	17.1
CESSNA411	202	47431	7770	16.4	238.8	38.5	16.4
CESSNA414	355	204469	48951	23.9	608.5	139.0	22.8
CESSNA421	912	296328	30633	10.3	324.9	33.6	10.3
CESSNA500	226	148670	18942	12.7	657.8	83.8	12.7
CESSNA550	81	1736	730	42.0	57.4	20.9	36.8
CESSNA600	35	692	127	18.4	66.7	8.4	12.3
CCNUTH195	23	290	73	25.2	43.0	5.2	12.2
CCNAFLLA4	209	22281	4778	21.4	107.7	23.0	21.3
CURTIS46	44	11673	2584	22.1	355.9	71.8	20.2

TABLE 2-5. GENERAL AVIATION ANNUAL HOURS BY SDR AIRCRAFT MANUFACTURER/MODEL GROUP - CY
1977 (6 of 14)

MANUFACTURE/MODEL GROUP	GROUP SIZE	ESTIMATE OF TOTAL HOURS	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF MEAN HOURS	STANDARD ERROR	PERCENT STANDARD ERROR
CURTISJR	21	102	.38	37.5	24.3	.62	25.5
CURTISROBIN	34	192	.83	43.2	33.9	9.1	26.9
CURTISWIF	174	5250	1511	28.8	92.1	22.2	24.1
CVAC 22	26	4535	1160	25.6	348.9	62.8	18.0
CVAC 240	53	2738	882	32.2	80.6	24.1	29.6
CVAC 340	21	3956	994	25.1	293.0	55.7	19.0
CVAC 480	31	3454	1259	36.4	167.4	51.3	30.6
CVAC BT13	100	1565	159	10.3	35.7	2.8	7.7
CAST G	25	498	.65	13.1	65.4	6.3	9.6
DHAV DHC2	335	38156	7866	20.6	185.1	35.5	19.2
DHAV DHG3	24	6384	585	9.2	297.3	25.1	8.4
DHAV DHG6	117	216663	42968	19.8	1851.8	367.3	19.8
DHAV/DH62	94	1929	166	8.6	37.4	2.5	6.8
DOUG A26	39	732	115	15.7	46.1	4.1	9.0
DOUG DC3	554	145202	36637	25.4	430.4	87.6	20.4
DOUG DC4	70	3392	1013	29.9	150.1	39.6	26.5
DOUG DC6	102	16406	2900	17.7	318.0	63.3	13.8
DOUG DC7	50	2060	366	17.8	113.3	13.1	11.6
DOUG DC8	42	11184	2363	21.1	421.2	79.9	19.0
DOUG DC9	110	52910	23098	43.7	481.0	210.0	43.7
INSTRNRP28	306	46372	7612	16.4	173.4	27.0	15.6

TABLE 2-5. GENERAL AVIATION ANNUAL HOURS BY SDR AIRCRAFT MANUFACTURER/MODEL GROUP - CY
1977 (7 of 14)

MANUFACTURER/MODEL GROUP	GROUP SIZE	ESTIMATE OF TOTAL HOURS	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF MEAN HOURS	STANDARD ERROR	PERCENT STANDARD ERROR
FLEET 16B	26	724	148	20.4	42.3	7.2	17.0
PRCHLD24	306	3456	972	28.1	37.3	4.9	13.0
PRCHLD119	22	1272	676	53.1	173.5	38.7	20.0
PRCHLD27	41	17095	2336	13.7	467.1	58.9	11.6
PRCHLDPH100	88	22190	5019	22.6	359.1	61.4	17.1
PRCHLD62	216	5859	845	14.4	58.5	6.8	11.7
GLASP1201	33	2412	289	12.0	76.6	8.4	11.0
GLASF1H301	127	9972	1527	15.3	85.5	11.6	13.6
GTLRS2T1	122	9810	1893	19.3	114.3	19.2	16.8
GRUHANG21	59	25308	6652	26.3	580.7	123.1	21.2
GRUHANG44	93	15911	3238	20.4	220.9	38.8	17.6
GRUHANG73	25	15469	2275	14.7	618.6	91.0	14.7
GRUHANTBA	35	719	154	21.4	54.8	8.5	15.4
GRUHAVA1	1182	270557	49740	18.4	230.5	42.3	18.4
GRUHAVA5	1277	320777	49132	15.0	251.6	37.8	15.0
GRUHAVG159	161	63188	8411	13.3	392.5	52.2	13.3
GRUHAVG159	143	72157	15772	21.9	504.6	110.3	21.9
GRUHAVG164	1320	444017	48846	10.9	384.4	35.5	9.2
HE.10 H295	75	19290	3991	20.7	309.1	59.1	19.1
HE.10 H391	24	1797	248	13.8	113.7	13.1	11.5
HILLERH12	632	65220	20653	31.7	168.2	48.6	28.9

TABLE 2-5. GENERAL AVIATION ANNUAL HOURS BY SDR AIRCRAFT MANUFACTURER/MODEL GROUP - CY
1977 (8 of 14)

MANUFACTURER/MODEL GROUP	GROUP SIZE	ESTIMATE OF TOTAL HOURS	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF MEAN HOURS	STANDARD ERROR	PERCENT STANDARD ERROR
HULLYDGE137	23	5592	2440	43.6	358.4	148.5	40.3
HUGHES269	568	191837	30812	16.1	434.2	61.4	14.1
HUGHES369	321	51979	15935	17.3	296.9	49.8	16.8
HAWKSDH104	42	6035	2811	46.6	368.5	143.7	39.4
HAWKSDH114	43	67222	3288	4.9	1563.1	76.5	4.9
HAWKSDH125	161	67957	13216	19.4	428.5	82.1	19.2
HINES B2	139	10889	2895	26.6	113.4	28.7	25.3
INTEFCP200	101	10498	1053	10.0	123.5	9.4	7.6
ISRAEL1121	117	34479	7395	21.4	357.2	57.5	16.1
ISRAEL1123	23	6399	829	13.0	278.2	36.0	13.0
ISRAEL1124	26	11374	933	6.2	437.5	35.9	8.2
JBRSTEDG15	79	1470	246	16.7	67.5	8.7	12.8
LAKF10	47	471	113	24.0	49.7	6.8	13.7
LEAR 23	67	46256	4398	9.5	690.4	65.6	9.5
LEAR 24	165	96162	14782	15.4	611.3	81.8	13.4
LEAR 25	149	69388	3504	5.1	465.3	23.5	5.1
LEAR 35	96	42934	4601	10.7	447.2	47.9	10.7
LET 113	170	12183	2545	20.9	80.1	15.7	19.6
LHEED12A	23	1374	193	14.1	84.6	9.8	11.6
LHEED12B	130	51725	6960	13.5	401.0	54.0	13.5
LHZED16	89	7021	2689	36.3	137.3	47.4	36.5

TABLE 2-5. GENERAL AVIATION ANNUAL HOURS BY SDR AIRCRAFT MANUFACTURER/MODEL GROUP - CY
1977 (9 of 14)

MANUFACTURER/MODEL GROUP	GROUP SIZE	ESTIMATE OF TOTAL HOURS	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF MEAN HOURS	STANDARD ERROR	PERCENT STANDARD ERROR
IKHED188	20	16820	3808	22.6	841.0	190.4	22.6
IKHEDP1	45	2266	1034	45.6	113.7	13.8	12.2
IKHEDT35	57	158	50	31.5	41.5	7.6	18.4
IUSCCB8	2276	92074	10124	11.0	62.9	5.9	9.4
MARTIN04	40	7141	738	10.3	263.5	22.4	8.5
MAULI A4	273	24408	1936	7.9	93.1	7.1	7.6
MAULI M5	267	30992	4098	13.2	119.6	15.5	13.0
MCCULLJ2	37	442	116	26.2	33.0	5.3	16.2
MCLISPUK8	131	2855	188	6.6	39.2	2.1	5.3
MEYERSO9	50	1056	85	8.0	36.3	2.3	6.4
MNC0090	72	767	155	20.2	36.2	4.8	13.9
MARITIM8	149	2909	692	23.8	39.8	5.7	14.3
MCONETM20	4590	698511	82162	11.8	153.6	17.9	11.7
MOOMEW22	21	1676	484	28.9	109.7	27.4	24.9
MORIS2150	35	1875	229	12.2	67.3	5.6	8.3
MRCHT1205	48	3218	446	13.9	78.6	9.1	12.2
MISBISU2	340	100347	14214	16.2	295.1	41.8	14.2
MULTECD16	49	3773	1089	28.9	106.4	27.8	26.1
MAYER B25	47	2004	613	30.6	113.1	29.1	25.7
MAYER F51	141	1705	713	41.8	37.0	9.6	25.9
MAYER MA260	51	2036	490	19.6	51.1	7.6	14.9

TABLE 2-5. GENERAL AVIATION ANNUAL HOURS BY SDR AIRCRAFT MANUFACTURER/MODEL GROUP - CY
1977 (10 of 14)

MANUFACTURER/MODEL GROUP	GROUP SIZE	ESTIMATE OF TOTAL HOURS	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF HRS IN HOURS	STANDARD ERROR	PERCENT STANDARD ERROR
HANEF T6	400	16124	3167	19.6	57.9	11.2	19.3
HAVAL M3N	161	14945	1328	8.9	242.6	17.0	7.0
NAVION NAVICN	1278	92534	10067	10.9	81.6	8.6	10.5
NC&NS165	53	1609	487	30.3	49.1	13.3	27.0
PICARACK6	157	5834	1474	25.3	40.4	9.8	24.3
PILATSB4	24	1823	371	20.3	76.0	15.4	20.3
PIPER J2	67	1321	237	18.0	47.2	6.2	13.0
PIPER J3	4202	199685	22221	11.1	84.3	8.6	10.2
PIPER J4	240	4142	319	7.7	43.0	2.4	5.5
PIPER J5	348	9380	1591	17.0	50.9	7.2	14.2
PIPER PA12	1361	56355	7286	12.9	65.2	6.8	10.5
PIPER PA14	109	8340	1095	13.1	92.4	9.7	10.5
PIPER PA15	197	5759	550	9.6	54.6	8.4	6.1
PIPER PA16	394	14709	1186	8.1	59.2	3.9	6.5
PIPER PA17	120	3150	647	26.9	53.9	11.9	22.1
PIPER PA18	3113	336689	84331	13.2	137.8	16.8	12.2
PIPER PA20	486	25491	2507	9.8	82.6	6.1	7.3
PIPER PA22	5206	269199	26347	9.8	67.0	5.7	8.6
PIPER PA23	3586	913036	160760	17.6	266.6	46.1	17.3
PIPER PA24	3377	494600	41876	8.5	153.9	12.5	8.1
PIPER PA25	1757	324837	35553	10.9	220.1	20.4	9.3

TABLE 2-5. GENERAL AVIATION ANNUAL HOURS BY SDR AIRCRAFT MANUFACTURER/MODEL GROUP - CY
1977 (11 of 14)

MANUFACTURE/MODEL GROUP	GROUP SIZE	ESTIMATE OF TOTAL HOURS	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF MEAN HOURS	STANDARD ERROR	PERCENT STANDARD ERROR
PIPER PA28	18274	4083198	411690	10.1	224.0	22.6	10.1
PIPER PA30	1313	258969	24989	9.6	200.7	19.0	9.4
PIPER PA31	1265	499845	39304	7.9	396.7	31.6	8.0
PIPER PA31T	109	48796	9332	19.1	447.7	85.6	19.1
PIPER PA32	2763	755016	138934	18.4	273.7	50.3	18.4
PIPER PA34	853	233393	25396	10.9	284.8	29.5	10.4
PIPER PA36	282	46915	13687	28.7	200.2	52.0	26.0
PITTS S1	139	15310	2287	14.9	117.3	16.7	14.2
PRATT PPG1	22	192	27	14.0	20.7	2.0	9.8
RAVEN R16	119	5476	688	12.6	50.1	5.3	10.6
RAVEN S50	105	2486	545	21.9	26.7	5.7	21.3
RAVEN S55	200	9397	1438	15.3	50.5	7.4	14.7
RKWE1112	500	118061	11530	9.8	246.3	23.6	9.6
RKWE11500	346	89442	12770	14.3	264.6	37.3	14.1
RKWE11520	66	6304	332	5.3	101.9	5.0	4.9
RKWE11560	135	23055	2484	10.8	170.8	18.4	10.8
RKWE11680	406	84408	10308	12.2	232.9	25.3	10.9
RKWE11680TP	133	36043	6571	16.2	271.0	49.4	18.2
RKWE11690TP	158	56982	5728	10.1	360.6	36.3	10.1
RWELINA265	198	92473	6184	6.7	467.0	31.2	6.7
RYAN ST3	166	3678	598	16.3	37.8	4.5	11.9

TABLE 2-5. GENERAL AVIATION ANNUAL HOURS BY SDR AIRCRAFT MANUFACTURER/MODEL GROUP - CY
1977 (12 of 14)

MANUFACTURER/MODEL GROUP SIZE	ESTIMATE OF TOTAL HOURS	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF MEAN HOURS	STANDARD ERROR	PERCENT STANDARD ERROR
RYAN STA	32	507	75	14.7	42.8	4.7
SCHLEPKAG	29	2210	368	16.7	76.2	12.7
SCHLEPK9	23	1413	117	8.3	65.1	5.1
SCHLEPK6	79	3912	1149	29.4	53.3	15.6
SCW22PSG1	704	30122	4280	14.1	52.9	6.5
SCW22PSG2	561	75733	11201	14.8	158.8	22.3
SCW22ETG3A	22	310	47	15.0	44.7	3.8
SEACO CLNGEF	31	1649	624	37.8	53.2	20.1
SEACO T	39	706	128	18.1	22.7	3.5
SKASKY55	85	4378	1559	35.6	255.1	74.0
SKASKY58	23	1267	507	40.0	254.0	0.0
SLIMDS13	362	38220	6498	17.0	116.3	19.1
SMTW 600	338	136853	45386	33.2	419.7	136.1
SMIAS SA31P	33	20576	2640	12.8	623.5	80.0
SOCATAMS894	41	3333	408	12.3	89.3	9.8
SPHATHCIRUS	109	5612	1497	26.7	62.1	14.3
STNSCN1C	178	4250	881	20.7	46.9	7.3
STNSCN2S	134	1052	428	23.1	44.1	5.4
STNSCN59	27	630	234	37.0	66.7	22.4
STNSCN77	104	1592	209	13.1	47.6	5.3
STOLARC3	246	2816	1005	35.7	24.9	7.4

TABLE 2-5. GENERAL AVIATION ANNUAL HOURS BY SDR AIRCRAFT MANUFACTURER/MODEL GROUP - CY
1977 (13 of 14)

MANUFACTURER/MODEL GFCUP	GROUP SIZE	ESTIMATE OF TOTAL HOURS	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF MEAN HOURS	STANDARD ERROR	PERCENT STANDARD ERROR
SUDAC 1A	105	1838	213	11.6	48.6	4.8	10.0
SUPAC V	26	164	68	41.4	33.0	4.6	14.0
SUNGMSA 226	117	94748	8954	9.4	731.3	66.7	9.1
SUNGMSA 26	99	51978	5574	10.7	525.0	56.3	10.7
TCAFKD	265	8295	567	6.8	70.4	4.4	6.3
TCAFP19	92	7858	883	11.2	85.4	9.6	11.2
ICRAFTA	30	143	68	47.4	45.0	0.0	0.0
ICRAFTBC	1854	55888	8324	14.9	52.9	7.3	13.8
ICRAFTTF	41	1616	297	18.4	74.1	11.2	15.1
TCAFTBL	232	5493	841	15.3	60.8	7.1	11.7
TEHCC 11A	34	1123	143	12.7	54.1	4.3	8.0
THUNDAY7	21	750	146	19.5	35.7	7.0	19.5
TRITEK65	325	7127	1476	20.7	47.6	7.0	14.8
TRITEK	32	279	69	24.9	26.8	4.3	16.2
UNIVACGCI	682	37775	7472	19.8	80.2	10.6	13.2
UNIVAF108	2214	66401	6962	10.5	48.3	4.1	8.4
UNIVAE415	2532	81613	11234	13.8	42.0	5.1	12.1
VICKEF745	26	3204	1207	37.7	328.2	59.0	18.0
WACO A50	28	743	138	18.5	79.6	12.7	15.9
WACO GKP	34	213	43	20.4	26.9	4.6	17.0
WACO R	31	42	26	62.8	9.3	2.7	29.1

TABLE 2-5. GENERAL AVIATION ANNUAL HOURS BY SDR AIRCRAFT MANUFACTURER/MODEL GROUP - CY
1977 (14 of 14)

MANUFACTURER/MODEL GROUP	GROUP SIZE	ESTIMATE OF TOTAL HOURS	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF NEW HOURS	STANDARD ERROR	PERCENT STANDARD ERROR
WACO UPF?	154	2939	785	26.7	38.9	9.3	24.0
WACO YK	40	798	150	18.8	68.3	10.1	14.8
WHELEY201	62	15082	3841	25.5	243.3	62.0	25.5
TOTAL	212598	35791558	1072604	3.0	194.2	5.7	2.93

TABLE 2-6. GENERAL AVIATION ACTIVE AIRCRAFT BY TYPE OF AIRCRAFT - CY 1977 (1 of 2)

AIRCRAFT TYPE	POPULATION SIZE	ESTIMATE OF ACTIVE AIRCRAFT	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF PERCENT ACTIVE	STANDARD ERROR
FIXED WING						
PISTON						
1 ENG 1-3 SEATS	74455	57340	851	1.5	77.0	1.1
1 ENG 4+ SEATS	98191	91960	529	0.6	93.7	0.5
TOTAL 1 ENG	172646	149300	1002	0.7	86.5	0.6
2 ENG 1-6 SEATS	15650	15074	141	0.9	96.1	0.9
2 ENG 7+ SEATS	7161	6226	86	1.4	86.9	1.2
TOTAL 2 ENG	22651	21301	165	0.8	93.2	0.7
OTHER PISTON	353	182	11	6.4	51.6	3.3
TOTAL PISTON	195850	170783	1015	0.6	87.2	0.5
TURBOPROP						
2 ENG 1-12 SEATS	2295	2276	15	0.7	99.2	0.7
2 ENG 13+ SEATS	581	549	13	2.5	94.6	2.3
TOTAL 2 ENG	2876	2825	20	0.7	98.3	0.7
OTHER TURBOPROP	98	64	4	6.4	65.5	6.2
TOTAL TURBOPROP	2974	2890	20	0.7	97.2	0.7
TURBOJET						
2 ENG	1955	1959	19	1.0	98.2	1.0
OTHER	499	318	10	3.4	63.8	2.2
TOTAL TURBOJET	2494	2277	22	1.0	91.3	0.9
TOTAL FIXED WING	201318	175951	1016	0.6	87.4	0.5
ROTOMARAFT PISTON	4652	2658	176	6.7	57.1	3.8

TABLE 2-6. GENERAL AVIATION ACTIVE AIRCRAFT BY TYPE OF AIRCRAFT - CY 1977 (2 of 2)

AIRCRAFT TYPE	POPULATION SIZE	ESTIMATE OF ACTIVE AIRCRAFT	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF PERCENT ACTIVE	STANDARD ERROR
TURBINE	2193	2067	27	1.3	94.3	1.3
TOTAL ROTERCRAFT	6845	4726	179	3.8	69.0	2.6
OTHER	4435	3616	69	1.9	81.5	1.6
TOTAL AIRCRAFT	212598	184294	1034	0.6	86.7	0.5

TABLE 2-7. GENERAL AVIATION ACTIVE AIRCRAFT BY STATE OF BASED AIRCRAFT-CY 1977 (1 of 3)

STATE	ESTIMATE OF POPULATION	STANDARD ERROR	ESTIMATE OF ACTIVE POPULATION	STANDARD ERROR	ESTIMATE OF PERCENT ACTIVE	STANDARD ERROR
ALABAMA	2773	603	2385	580	86.0	28.1
ALASKA	5870	378	5130	359	87.4	8.3
ARIZONA	4577	694	3700	647	80.8	18.7
ARKANSAS	2900	518	2597	507	89.5	23.7
CALIFORNIA	27132	1105	23344 ^P	1035	84.2 ^P	4.7
COLORADO	3894	594	3497	583	89.8	20.3
CONNECTICUT	1715	408	1444	398	84.2	30.7
DELAWARE	763	244	608	230	79.7	39.5
DC	169	67	119	51	70.4	41.1
FLORIDA	10328	677	9246 ^P	639	89.5 ^P	7.9
GEORGIA	4213	646	3750	636	89.0	20.4
HAWAII	621	262	541	255	87.2	55.2
IDAMO	2370	504	2080	495	87.6	28.0
ILLINOIS	7904	792	7716 ^P	768	97.6 ^P	13.0
INDIANA	4338	673	4183 ^P	651	96.4 ^P	19.8
IOWA	3873	643	3524	635	91.0	22.3
KANSAS	4658	708	3894	692	83.6	19.6
KENTUCKY	1536	413	1385	404	90.2	35.8
LOUISIANA	3716	522	3350	510	90.2	18.7
MAINE	1218	353	1050	383	86.2	37.7
MARYLAND	2863	571	2464	539	86.7	25.8

^P : PRELIMINARY RESULT

TABLE 2-7. GENERAL AVIATION ACTIVE AIRCRAFT BY STATE OF BASED AIRCRAFT-CY 1977 (2 of 3)

STATE	ESTIMATE OF POPULATION	STANDARD ERROR	ESTIMATE OF ACTIVE POPULATION	STANDARD ERROR	ESTIMATE OF PERCENT ACTIVE	STANDARD ERROR
MASSACHUSETTS	2814	569	2463	546	87.5	26.3
MICHIGAN	7681	956	6616	980	88.8	16.5
MINNESOTA	5132	729	4122	636	80.3	17.7
MISSISSIPPI	2219	455	1895	462	85.4	26.6
MISSOURI	4577	726	3905	707	85.3	20.6
NEBRASKA	2428	438	2230	428	91.8	28.2
NEVADA	2654	482	2361	492	88.2	23.1
NEW HAMPSHIRE	1732	400	1491	369	86.1	30.0
NEW JERSEY	1175	364	993	332	86.5	37.6
NEW MEXICO	4522	740	4060	730	89.8	21.8
NEW YORK	1932	372	1747	366	90.4	25.7
NORTH CAROLINA	6495	539	6092 ^P	688	93.8 ^P	9.6
NORTH DAKOTA	4236	687	3717	673	87.8	21.3
OHIO	1671	392	1508	385	90.2	31.3
OKLAHOMA	8267	925	6978	879	88.4	18.2
OREGON	4547	668	3827	643	88.2	18.8
PENNSYLVANIA	5161	691	4284	669	83.8	17.1
RHODE ISLAND	6282	850	5310	832	86.5	17.5
SOUTH CAROLINA	338	191	299	183	88.6	73.7
SOUTH DAKOTA	1742	434	1485	421	85.2	32.2
TEXAS	1429	366	1298	361	90.8	38.4
UTAH	2971	576	2607	563	87.8	25.5
VIRGINIA	15713	871	14355 ^P	776	91.4 ^P	6.5
VIRGINIA	2789	1537	1406	423	91.5	37.8
		444	209	386	204	66.9
		2789	556	2296	523	82.3

^P : PRELIMINARY RESULT

TABLE 2-7. GENERAL AVIATION ACTIVE AIRCRAFT BY STATE OF BASED AIRCRAFT-CY 1977 (3 of 3)

STATE	ESTIMATE OF POPULATION	STANDARD ERROR	ESTIMATE OF ACTIVE POPULATION	STANDARD ERROR	ESTIMATE OF PERCENT ACTIVE	STANDARD ERROR
WISCONSIN	6384	591	4995	560	76.2	11.4
WEST VIRGINIA	1095	341	965	324	86.2	80.4
WYOMING	4395	681	3519	636	80.1	19.1
Puerto Rico	1299	312	1176	306	90.5	32.1
OTHER U.S. TERRITORIES	466	233	404	219	87.2	68.4
FOREIGN	158	115	137	113	86.6	95.5
TOTAL	212598	310	161	234	150	75.7
						62.6
						0.5

NOTE : COLUMN SUMMATIONS MAY DIFFER FROM PRINTED TOTALS DUE TO ESTIMATION PROCEDURES.

TABLE 2-8. GENERAL AVIATION ACTIVE AIRCRAFT BY REGION OF BASED AIRCRAFT - CY 1977

REGION	ESTIMATE OF POPULATION	STANDARD ERROR	ESTIMATE OF ACTIVE POPULATION	STANDARD ERROR	ESTIMATE OF PERCENT ACTIVE	STANDARD ERROR PERCENT ACTIVE
ALASKAN	5870	378	5130	359	87.4	6.3
CENTRAL	15763	1240	13666	1206	86.7	10.3
EASTERN	24983	1861	21940 ^P	1406	87.8 ^P	7.4
EUROPEAN	158	83	101	70	64.0	55.6
GRAN LAKES	37720	1750	33337 ^P	1697	88.4 ^P	6.0
NEW ENGLAND	7703	684	6633	856	86.1	14.9
NORTHWESTERN	13922	1020	11372	986	81.6	9.3
PACIFIC	666	267	573	259	86.1	52.0
ROCKY MOUNTAIN	12261	1025	11118	1005	90.7	11.2
SCOUTMAN	30714	1531	27085 ^P	1490	86.2 ^P	6.4
SOUTHWESTERN	28813	1310	25880 ^P	1234	89.8 ^P	5.7
WESTERN	34043	1326	28536 ^P	1256	83.8 ^P	8.7
TOTAL	212598		186294	1034	86.7	0.5

NOTE : COLUMN SUMMATIONS MAY DIFFER FROM PRINTED TOTALS DUE TO ESTIMATION PROCEDURES

P : PRELIMINARY RESULT

TABLE 2-9. GENERAL AVIATION AIRCRAFT BY TYPE OF AIRCRAFT AND PRIMARY USE - CY 1977
(1 of 4)

	TOTAL ACTIVE	ACTIVE USERS						INACTIVE		
		EXECUTIVE	BUSINESS	PERSONAL	AERIAL APPL.	INSTR	AIR TAXI	INDUS-TAXI	R&T-TAXI	OTHER
FIXED WING										
PISTON										
1 ENG 1-3 SEATS										
EST. NO. ACT.	57340	EST. NO. X STD. ERROR	85	3882	34221	6032	8166	63	350	2077
STD. ERROR	851		D	C	A	B	D	C	D	C
EST % ACT.	77.0									
1 ENG 4+ SEATS										
EST. NO. ACT.	91960	EST. NO. X STD. ERROR	1074	27650	47515	121	6377	1945	520	5654
STD. ERROR	529		C	A	A	D	B	B	D	C
EST % ACT.	93.7									
TOTAL 1 ENG										
EST. NO. ACT.	149300	EST. NO. X STD. ERROR	1159	31533	81737	6154	14543	2099	870	7731
STD. ERROR	1002		C	A	A	A	B	B	C	B
EST % ACT.	86.5									
2 ENG 1-6 SEATS										
EST. NO. ACT.	15074	EST. NO. X STD. ERROR	1914	6961	2971	131	678	1715	22	309
STD. ERROR	141		B	A	B	D	D	D	D	D
EST % ACT.	96.1									

		CODE
STANDARD ERROR		
GREATER THAN		LESS THAN OR EQUAL TO
0 X		10 X
10 X		20 X
20 X		30 X
30 X		D

TABLE 2-9. GENERAL AVIATION AIRCRAFT BY TYPE OF AIRCRAFT AND PRIMARY USE - CY 1977
(2 of 4)

TOTAL ACTIVE		ACTIVE USERS						INACTIVE	
		BUSI- NESS	PERSO- NAL APPL.	INSTR	AIR TAXI	INDUS- TRIAL	REP- TAL	OTHER	
2 ENG 7+ SEATS									
EST. NO. ACT.	6226	EST. NO. % STD. ERROR	1941 A	1625 B	406 D	104 A	90 D	1449 A	62 D
STD. ERROR	86								
EST % ACT.	86.9								
TOTAL 2 ENG									
EST. NO. ACT.	21301	EST. NO. % STD. ERROR	3656 A	8587 B	3378 D	235 C	768 B	3165 D	85 C
STD. ERROR	165								
EST % ACT.	93.2								
CTHB PISTON									
EST. NO. ACT.	182	EST. NO. % STD. ERROR	5017 D	1 D	8 D	3 B	66 A	0 A	47 A
STD. ERROR	11								
EST % ACT.	51.6								
TOTAL PISTON									
EST. NO. ACT.	170783	EST. NO. % STD. ERROR	5017 A	40129 A	85118 A	6456 A	15312 B	5222 A	955 C
STD. ERROR	1015								
EST % ACT.	67.2								
TURBOPROP									
2 ENG 1-12 SEATS									
EST. NO. ACT.	2276	EST. NO. % STD. ERROR	1631 A	367 B	34 D	0 A	13 D	179 C	0 A
STD. ERROR	15								
EST % ACT.	99.2								
2 ENG 13+ SEATS									
EST. NO. ACT.	549	EST. NO. % STD. ERROR	182 B	43 D	4 D	0 A	0 A	251 B	4 D
STD. ERROR	13								
EST % ACT.	94.6								

STANDARD ERROR		CODE	
GREATER THAN OR EQUAL TO		LESS THAN	
0 X		10 X	
10 X		20 X	
20 X		30 X	
30 X		D	

TABLE 2-9. GENERAL AVIATION AIRCRAFT BY TYPE OF AIRCRAFT AND PRIMARY USE - CY 1977
(3 of 4)

	TOTAL ACTIVE	BUSIN- ESS DRIVE	BUSI- NESS	PERSO- NAL	AERIAL APPL	ACTIVE USERS	AIR TAXI	INDUS- TRIAL	RES- TAL	OTHER	INACTIVE
TOTAL 2 ENG. EST. NO. ACT.	2825	EST. NO. X STD. ERROR	1814	411	38	0	13	431	4	47	63
STD. ERROR	20	X STD. ERROR	1	D			B	D	D	D	52
EST % ACT.	98.3										D
CHEM TURBOPROP EST. NO. ACT.	64	EST. NO. X STD. ERROR	9	C	0	0	1	1	0	16	25
STD. ERROR	4	X STD. ERROR									31
EST % ACT.	65.5										B
TOTAL TURBOPROP EST. NO. ACT.	2890	EST. NO. X STD. ERROR	1824	419	38	0	15	434	4	63	86
STD. ERROR	20	X STD. ERROR	1	B	D			B	D	D	C
EST % ACT.	97.2										64
TURBOJET 2 ENG	1959	EST. NO. X STD. ERROR	1477	99	10	6	62	208	18	0	75
EST. NO. ACT.	19	X STD. ERROR	1	C	D	D	B	D	A	D	D
STD. ERROR	98.2										35
EST % ACT.											B
CHEM EST. NO. ACT.	318	EST. NO. X STD. ERROR	111	74	5	0	5	C	A	B	66
STD. ERROR	10	X STD. ERROR	1	C	D	A	D				195
EST % ACT.	63.8										A
TOTAL TURBOJET EST. NO. ACT.	2277	EST. NO. X STD. ERROR	1589	174	15	6	68	217	18	29	182
STD. ERROR	22	X STD. ERROR	1	C	D	D	B	D	B	C	231
EST % ACT.	91.3										A

STANDARD ERROR		CODE	
GREATER THAN	LESS THAN OR EQUAL TO		
0 X	10 X	A	
10 X	20 X	B	
20 X	30 X	C	
30 X	40 X	D	

TABLE 2-9. GENERAL AVIATION AIRCRAFT BY TYPE OF AIRCRAFT AND PRIMARY USE - CY 1977
 (4 of 4)

	TOTAL ACTIVE			ACTIVE USERS						INACTIVE		
	EXEC- UTIVE	BUSI- NESS	PERSNL APPL	INSTR	AIR TAXI	INDUS- TRIAL	REH- TAL	OTHER				
TOTAL FIXED WING												
EST. NO. ACT.	175951	EST. NO. STD. ERROR	8432	40723	85172	6862	15396	5874	978	8366	3854	26055
STD. ERROR	1016	% STD. ERROR	1	1	1	1	1	1	C	B	B	A
EST % ACT.	87.4											
ROTACRAFT												
PISTON												
EST. NO. ACT.	2658	EST. NO. STD. ERROR	53	353	539	869	139	86	195	6	382	2025
STD. ERROR	176	% STD. ERROR	D	D	B	C	D	D	D	D	C	A
EST % ACT.	57.1											
TURBINE												
EST. NO. ACT.	2067	EST. NO. STD. ERROR	290	135	10	59	170	875	166	24	332	127
STD. ERROR	27	% STD. ERROR	D	D	D	C	D	B	D	D	C	C
EST % ACT.	94.3											
TOTAL ROTACRAFT												
EST. NO. ACT.	4726	EST. NO. STD. ERROR	344	489	550	929	310	961	361	30	715	2152
STD. ERROR	179	% STD. ERROR	D	C	B	B	D	B	C	D	C	A
EST % ACT.	69.0											
OTHER												
EST. NO. ACT.	3616	EST. NO. STD. ERROR	5	183	2569	0	389	2	D	1	221	831
STD. ERROR	69	% STD. ERROR	D	B	A	A	B	D	C	C	B	A
EST % ACT.	81.5											
TOTAL AIRCRAFT												
EST. NO. ACT.	184294	EST. NO. STD. ERROR	8782	41396	88292	7392	16096	6838	1342	6619	4799	535
STD. ERROR	1034	% STD. ERROR	450	1902	2416	303	1690	502	239	1310	1310	
EST % ACT.	86.7											

STANDARD ERROR		CODE	
GREATER THAN		LESS THAN	
-----	-----	-----	-----
0 %	-----	10 %	-----
10 %	-----	20 %	-----
20 %	-----	30 %	-----
30 %	-----	D	-----

NOTE : ROW AND COLUMN SUMMATIONS MAY DIFFER FROM PRINTED TOTALS DUE TO ESTIMATION PROCEDURES.

TABLE 2-10. GENERAL AVIATION ACTIVE AIRCRAFT IFR FLOWN AND TRANSPONDER EQUIPPED - CY 1977
(1 of 2)

AIRCRAFT TYPE	ESTIMATED NUMBER OF A/C FLOWN IFR	PERCENT STANDARD ERROR	ESTIMATED PERCENT OF ACTIVE A/C FLOWN IFR	ESTIMATED NUMBER OF A/C FLOWN IFR WITH TRANSPONDER	PERCENT STANDARD ERROR	ESTIMATED PERCENT OF IFR WITH TRANSPONDER
FIXED WING						
PISTON						
1 ENG 1-3 SEATS	2324	C	4.1	1219	C	52.5
1 ENG 4+ SEATS	37714	A	41.0	36696	A	97.3
TOTAL 1 ENG	40038	A	26.8	37915	A	94.7
2 ENG 1-6 SEATS	13143	A	87.2	13143	A	100.0
2 ENG 7+ SEATS	5751	A	92.4	5751	A	100.0
TOTAL 2 ENG	18894	A	88.7	18894	A	100.0
OTHER PISTON	141	A	77.4	141	B	100.0
TOTAL PISTON	59074	A	34.6	56960	A	96.4
TURBOPROP						
2 ENG 1-12 SEATS	2259	A	99.3	2254	A	99.8
2 ENG 13+ SEATS	550	A	100.0	550	A	100.0
TOTAL 2 ENG	2809	A	99.4	2807	A	99.9
OTHER TURBOPROP	63	B	99.3	63	B	100.0

*	STANDARD ERROR	CODE	*
*	GREATER THAN	LESS THAN	*
*	OR	OR	*
*	EQUAL TO	EQUAL TO	*
*	0 %	10 %	A
*	10 %	20 %	B
*	20 %	30 %	C
*	30 %	40 %	D

TABLE 2-10. GENERAL AVIATION ACTIVE AIRCRAFT IFR FLOWN AND TRANSPONDER EQUIPPED - CY 1977
(2 of 2)

AIRCRAFT TYPE	ESTIMATED NUMBER OF A/C FLOW IFR	PERCENT STANDARD ERROR	ESTIMATED PERCENT OF ACTIVE A/C FLOWS IFR	ESTIMATED NUMBER OF A/C FLOW IFR WITH TRANSPONDER	PERCENT STANDARD ERROR	ESTIMATED PERCENT OF IFR WITH TRANSPONDER
TOTAL TURBOPROP	2873	A	99.4	2873	A	100.0
TURBOJET 2 ENG	1893	A	96.6	1893	A	100.0
OTHER	313	A	98.4	313	A	100.0
TOTAL TURBOJET	2206	A	96.9	2206	A	100.0
TOTAL FIXED WING	64154	A	36.5	62123	A	96.0
ROTOCRAFT						
PISTON	34	D	1.3	20	D	59.4
TURBINE	85	D	4.1	76	D	69.3
TOTAL ROTOCRAFT	120	D	2.5	96	D	80.4
OTHER	40	D	1.1	5	D	13.9
TOTAL AIRCRAFT	64314	A	36.9	62225	A	96.0

NOTE : COLUMN SUMMATIONS MAY EXCEED PRINTED SUBTOTALS AND TOTALS DUE TO ESTIMATION PROCEDURES.

*	STANDARD ERROR	*	CODE
*	GREATER THAN	LESS THAN OR EQUAL TO	----
*	-----	-----	-----
*	0 %	10 %	A
*	10 %	20 %	B
*	20 %	30 %	C
*	30 %	-----	D

TABLE 2-11. GENERAL AVIATION ACTIVE AIRCRAFT BY SDR AIRCRAFT MANUFACTURER/MODEL GROUP
CY 1977 (1 of 14)

MANUFACTURER/MODEL GROUP	GROUP SIZE	ESTIMATE OF ACTIVE AIRCRAFT	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF PERCENT ACTIVE	STANDARD ERROR
OTHER 01	7880	4920	351	7.1	62.4	4.5
OTHER 02	1236	666	58	8.6	53.9	4.7
OTHER 03	301	157	8	4.8	52.2	2.5
OTHER 04	175	82	6	6.8	47.1	3.2
OTHER 05	66	31	8	24.9	46.3	11.5
CIRRUS 06	346	346	0	0.0	100.0	0.0
CIRRUS 07	100	88	10	11.4	87.6	10.0
CIRRUS 08	44	30	3	8.4	69.2	5.8
OTHER 09	201	197	5	2.5	98.0	2.4
OTHER 10	144	63	8	13.3	43.4	5.8
CIRRUS 11	1376	417	28	6.8	30.3	2.1
CIRRUS 12	180	139	8	6.0	77.4	4.6
CIRRUS 13	1550	1138	46	4.1	73.4	3.0
AEROSPACE 316	50	50	0	0.0	100.0	0.0
AEROSPACE 341	55	55	0	0.0	100.0	0.0
AIRPSA	290	214	15	7.0	73.7	5.1
AIRSPC18	24	11	2	13.9	47.1	6.5
AT3TECAT-300	81	81	0	0.0	100.0	0.0
AND FALC10	80	80	0	0.0	100.0	0.0
AND FALC20	187	187	0	0.0	100.0	0.0
ARCTICS1A	91	39	4	9.7	42.9	4.1

NOTE: See following page for coding.

NOTE: Other XX refers to all general aviation aircraft belonging to manufacturer/model groups of fewer than 20 aircraft in size for aircraft XX where XX stands for

- 01 Fixed wing piston, 1 engine, 1-3 seats.
- 02 Fixed wing piston, 1 engine, 4+ seats.
- 03 Fixed wing piston, 2 engines, 1-6 seats.
- 04 Fixed wing piston, 2 engines, 7+ seats.
- 05 Fixed wing piston, other.
- 06 Fixed wing turboprop, 2 engines, 1-12 seats.
- 07 Fixed wing turboprop, 2 engines, 13+ seats.
- 08 Fixed wing turboprop, other.
- 09 Fixed wing turbojet, 2 engines.
- 10 Fixed wing turbojet, other.
- 11 Rotorcraft, piston.
- 12 Rotorcraft, turbine.
- 13 Other aircraft.

TABLE 2-11. GENERAL AVIATION ACTIVE AIRCRAFT BY SDR AIRCRAFT MANUFACTURER/MODEL GROUP -
CY 1977 (2 of 14)

MANUFACTURER/MODEL GROUP	GROUP SIZE	ESTIMATE OF ACTIVE AIRCRAFT	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF ACTIVE	STANDARD ERROR OF PERCENT ACTIVE
ARCTICS 1B1	23	8	1	16.8	35.3	5.9
ARONCA 15	206	147	8	5.3	71.2	3.8
ARONCA 58	162	80	13	16.3	49.4	6.1
ARONCA 65	139	66	12	17.7	47.3	6.4
ARONCA C3	49	21	5	25.6	42.4	10.9
AYPES S2	789	731	14	2.0	92.6	1.8
PAC 111	29	29	0	0.0	100.0	0.0
PALWSPIRIFT	225	213	10	4.7	94.5	4.4
BEAGLE FB206	27	16	5	27.8	60.0	16.7
BEECH 100	173	173	0	0.0	100.0	0.0
BEECH 17	191	80	20	24.3	42.0	10.2
BEECH 18	1148	866	46	5.3	75.4	4.0
BEECH 200	207	195	14	7.1	94.3	6.7
BEECH 23	2453	2266	129	5.7	92.4	5.3
BEECH 35	1464	1455	4	0.3	99.4	0.3
BEECH 35	6809	6375	204	3.2	93.6	3.0
BEECH 36	857	857	0	0.0	100.0	0.0
BEECH 45	321	281	9	3.2	87.5	2.8
BEECH 50	366	346	7	2.1	94.5	2.0
BEECH 55	1966	1961	13	0.7	99.7	0.7
BEECH 56	66	66	0	0.0	100.0	0.0

TABLE 2-11. GENERAL AVIATION ACTIVE AIRCRAFT BY SDR AIRCRAFT MANUFACTURER/MODEL GROUP -
CY 1977 (3 of 14)

MANUFACTURER/MODEL GROUP	GROUP SIZE	ESTIMATE OF ACTIVE AIRCRAFT	STANDARD ERROR	PERCENT STANDARD ERROR ACTIVE	ESTIMATE OF PERCENT ACTIVE	STANDARD ERROR
BEECH 58	714	714	0	0.0	100.0	0.0
BEECH 60	294	294	0	0.0	100.0	0.0
BEECH 65	179	179	0	0.0	100.0	0.0
BEECH 80	241	210	13	6.0	87.2	5.3
BEECH 90	474	472	6	1.3	99.6	1.3
BEECH 95	492	484	9	1.9	98.4	1.9
BEECH 99	108	105	8	7.9	97.2	7.7
BELL 204	99	70	1	1.9	70.3	1.4
BELL 205	61	61	0	0.0	100.0	0.0
BELL 206	1093	1086	21	1.9	99.3	1.9
BELL 212	83	83	0	0.0	100.0	0.0
BELL 47	1535	1064	163	15.3	69.3	10.6
FLANCA11	949	599	27	4.6	63.2	2.9
FLANCA13	296	127	15	11.9	42.8	5.1
FLANCA1419	300	259	11	4.2	86.2	3.6
FLANCA17	937	929	17	1.8	99.1	1.8
FLANCA7	5751	4627	148	3.2	80.5	2.6
FLANCA6	424	424	0	0.0	100.0	0.0
BOEING BN2	69	66	7	10.8	96.0	10.4
BOEING707	19	14	2	15.5	75.0	11.6
BOEING720	20	16	2	9.5	81.8	7.8

TABLE 2-11. GENERAL AVIATION ACTIVE AIRCRAFT BY SDR AIRCRAFT MANUFACTURER/MODEL GROUP -
CY 1977 (4 of 14)

MANUFACTURE/MODEL GROUP	GROUP SIZE	ESTIMATE OF ACTIVE AIRCRAFT	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF PERCENT ACTIVE	STANDARD ERROR
BOEING727	58	50	5	10.9	85.6	9.3
BC21NG75	2026	866	75	8.6	42.7	3.7
BOEING817	22	16	5	34.7	71.4	24.7
BOLKNS105	57	57	0	0.0	100.0	0.0
EMERSTARFLEET2	31	9	1	15.2	29.6	4.5
EMERSTARFLEET7	22	8	1	9.1	36.8	3.3
CARMICMCDELIC	38	38	0	0.0	100.0	0.0
CESNSA120	926	717	72	10.0	77.5	7.8
CESNSA140	2516	2021	82	4.0	80.3	3.2
CESNSA150	16525	15193	684	4.5	91.9	4.1
CESNSA170	2588	2413	67	2.8	93.2	2.6
CESNSA172	19631	19482	255	1.3	99.2	1.3
CESNSA175	1430	1261	45	3.6	88.2	3.2
CESNSA177	2852	2850	17	0.6	99.9	0.6
CESNSA180	2505	2330	64	2.6	93.0	2.6
CESNSA182	10916	10576	246	2.3	96.9	2.3
CESNSA185	1115	1101	29	2.6	98.7	2.6
CESNSA188	1659	1516	97	6.4	91.4	5.8
CESNSA190	88	69	2	3.0	77.9	2.3
CESNSA195	502	294	44	18.9	58.5	8.7
CESNSA205	263	251	9	3.5	95.4	3.3

TABLE 2-11. GENERAL AVIATION ACTIVE AIRCRAFT BY SDR AIRCRAFT MANUFACTURER/MODEL GROUP -
CY 1977 (5 of 14)

MANUFACTURE/MODEL GROUP	GROUP SIZE	ESTIMATE OF ACTIVE AIRCRAFT	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF PERCENT ACTIVE	STANDARD ERROR OF PERCENT ACTIVE
CESSNA206	2122	2093	46	2.2	98.6	2.2
CESSNA207	159	159	0	0.0	100.0	0.0
CESSNA210	3971	3873	131	3.4	97.5	3.3
CESSNA305	243	179	18	10.0	73.5	7.4
CESSNA310	2997	2950	56	1.9	98.4	1.9
CESSNA320	370	359	18	5.0	97.1	4.9
CESSNA336	102	92	3	3.5	90.3	3.2
CESSNA337	1182	1168	26	2.2	98.8	2.2
CESSNA340	468	468	0	0.0	100.0	0.0
CESSNA401	254	252	4	1.7	99.3	1.7
CESSNA402	447	420	17	4.0	93.9	3.7
CESSNA404	44	42	1	2.6	96.5	2.5
CESSNA411	202	202	0	0.0	100.0	0.0
CESSNA414	355	336	24	7.2	94.6	6.8
CESSNA421	912	912	0	0.0	100.0	0.0
CESSNA500	226	226	0	0.0	100.0	0.0
CESSNAT50	81	30	6	21.0	37.3	7.8
CESSNAUC94	35	10	1	13.7	28.8	3.9
COMPTH185	23	7	1	22.1	29.3	6.5
CCHAEFLA4	209	207	5	2.4	99.0	2.4
CURFISC46	44	33	3	9.1	74.5	6.8

TABLE 2-11. GENERAL AVIATION ACTIVE AIRCRAFT BY SDR AIRCRAFT MANUFACTURER/MODEL GROUP -
CY 1977 (6 of 14)

MANUFACTURER/ACDEL GROUP	GROUP SIZE	ESTIMATE OF ACTIVE AIRCRAFT	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OR PERCENT ACTIVE	STANDARD ERROR
CURTISJF	21	4	1	27.6	20.0	5.5
CURTISROBIN	34	6	2	33.7	16.6	5.6
CURTISWAIF	174	57	9	15.2	32.7	5.0
CVAC 22	26	13	2	18.2	50.0	9.1
CVAC 240	53	34	4	12.1	64.1	7.6
CVAC 340	21	14	2	16.4	64.3	10.6
CVAC 440	31	21	4	19.7	66.6	13.1
CVAC BT-13	100	43	3	6.8	43.2	2.9
DAE 6	25	8	1	8.9	30.4	2.7
DHAV DHC2	335	206	16	8.0	61.6	4.9
DHAV DHC3	24	21	1	3.6	89.5	3.2
DHAV DHC6	117	117	0	0.0	100.0	0.0
DAVIXBORG2	94	52	3	5.3	54.9	2.9
DOUG 126	39	16	2	12.9	40.7	5.2
DOUG DC3	554	337	51	15.1	60.9	9.2
DOUG DC4	70	23	3	13.7	32.3	4.4
DOUG DC6	102	52	6	11.1	51.2	5.7
DOUG DC7	50	18	2	13.4	36.4	4.9
DOUG DC8	42	27	2	9.3	63.2	5.9
DOUG DC9	110	110	0	0.0	100.0	0.0
INSTENF28	396	267	15	5.5	87.4	6.8

TABLE 2-11. GENERAL AVIATION ACTIVE AIRCRAFT BY SDR AIRCRAFT MANUFACTURER/MODEL GROUP -
CY 1977 (7 of 14)

MANUFACTURER/MODEL GROUP	GROUP SIZE	ESTIMATE OF ACTIVE AIRCRAFT	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF PERCENT ACTIVE	STANDARD ERROR
FIRET 16B	26	17	2	11.3	65.9	7.4
FAC HLD24	306	93	23	24.6	30.3	7.5
FAC HLD C119	22	7	4	49.2	33.3	16.4
FAC HLD P27	41	37	3	7.1	69.3	6.3
FAC HLD PH1100	88	62	9	14.8	70.2	10.4
FAC HLD PH62	216	100	8	8.5	46.4	3.9
GLASPI201	33	32	2	4.8	95.5	6.6
GLASPIR301	127	117	8	7.0	91.8	6.4
GRT MRS2T1	122	86	8	9.5	70.3	6.7
GRUHANG21	59	44	7	15.5	73.9	11.5
GRUHANG44	93	72	7	10.3	77.4	7.9
GRUHANG73	25	25	0	0.0	100.0	0.0
GRUDAWTBK	35	13	2	14.8	37.5	5.5
GRUHAVA1	1182	1174	16	1.4	99.3	1.6
GRUHAVA5	1277	1277	0	0.0	100.0	0.0
GRUHAVG159	161	161	0	0.0	100.0	0.0
GRUHAVG159	143	143	0	0.0	100.0	0.0
GRUHAVG164	1320	1155	67	5.8	87.5	5.1
HELIOS H295	75	62	5	7.9	83.2	6.5
HELIOS H391	24	16	1	7.6	65.9	5.0
HILLER H12	632	388	50	13.0	61.4	8.0

TABLE 2-11. GENERAL AVIATION ACTIVE AIRCRAFT BY SDR AIRCRAFT MANUFACTURER/MODEL GROUP -
CY 1977 (8 of 14)

MANUFACTURER/MODEL GROUP	GROUP SIZE	ESTIMATE OF ACTIVE AIRCRAFT	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF PERCENT ACTIVE	STANDARD ERROR
HNLYPGAP137	23	16	3	16.7	67.8	11.3
HUGHES269	568	442	34	7.6	77.8	5.9
HUGHES365	321	310	13	4.3	96.5	4.2
HWKSLIDH104	42	17	4	24.8	39.4	9.8
HWKSLIDH114	43	43	0	0.0	100.0	0.0
HWKSLIDH125	161	159	5	3.4	98.5	3.3
HYNES 82	139	96	8	8.1	69.0	5.6
INTRC200	101	85	5	6.1	88.2	5.2
ISRAEL1121	117	97	14	14.2	82.5	11.7
ISRAEL1123	23	23	0	0.0	100.0	0.0
ISRAEL1124	26	26	0	0.0	100.0	0.0
JBMSTDGA15	79	22	2	10.7	27.6	3.0
LAIKF10	47	9	2	19.7	20.2	4.0
LEAF 23	67	67	0	0.0	100.0	0.0
LEAR 24	165	157	12	7.6	95.3	7.2
LEAR 25	149	149	0	0.0	100.0	0.0
LEAR 35	96	96	0	0.0	100.0	0.0
LET L13	170	152	11	7.3	89.4	6.6
LKDZED12A	23	16	1	6.0	70.6	5.6
LKHED1329	130	129	0	0.0	99.2	0.0
LKHED18	89	51	8	16.6	57.5	9.5

TABLE 2-11. GENERAL AVIATION ACTIVE AIRCRAFT BY SDR AIRCRAFT MANUFACTURER/MODEL GROUP -
CY 1977 (9 of 14)

MANUFACTURE/MODEL GROUP	GR CUP SIZE	ESTIMATE OF ACTIVE AIRCRAFT [*]	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF PERCENT ACTIVE	STANDARD ERROR
IKNEED184	20	20	0	0.0	100.0	0.0
IKNEFDPV1	45	20	9	44.3	44.3	19.5
IKNEFDUT33	57	4	1	25.6	6.7	1.7
IUSCCP8	2276	1464	84	5.8	64.3	3.7
MARTIN494	40	27	2	5.9	67.7	4.0
MAULE M4	272	262	6	2.1	96.0	2.0
MAULE M5	267	259	7	2.6	97.0	2.5
MCCLUBBJ2	37	13	3	20.7	36.1	7.5
MCILISHFUNKB	131	73	3	4.0	55.6	2.2
MEYERSOTY	50	29	1	4.8	58.1	2.8
MHCCUP90	72	22	3	14.6	31.1	4.5
MARITEN18	149	73	14	19.0	49.1	9.3
MOONEYM20	4590	4546	70	1.5	99.0	1.5
MOONEYM22	21	15	2	14.5	72.7	10.6
MORISY250	35	28	2	8.9	79.5	7.1
MCHTIS105	48	43	3	6.5	89.9	5.9
MTSBSIMU2	340	0	0.0	100.0	0.0	0.0
MULTECD16	49	35	4	12.3	72.4	8.9
MADEF B25	47	18	3	16.6	37.7	6.2
MANER F51	141	46	15	33.2	32.7	10.9
MANER MA260	51	40	5	12.8	78.1	10.0

TABLE 2-11. GENERAL AVIATION ACTIVE AIRCRAFT BY SDR AIRCRAFT MANUFACTURER/MODEL GROUP -
CY 1977 (10 of 14)

MANUFACTURER/MODEL GROUP	GROUP SIZE	ESTIMATE OF ACTIVE AIRCRAFT	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF PERCENT ACTIVE	STANDARD ERROR
HAWKER T6	400	279	10	3.7	69.7	2.6
NAVAL N3N	161	62	3	5.5	38.4	2.1
NAVICKENVICH	1278	1131	32	2.6	88.5	2.5
MORNS165	53	33	4	13.7	61.8	8.5
PICAFLEX 6	157	144	10	7.0	92.0	6.5
PILATSB4	24	24	0	0.0	100.0	0.0
PIPER J2	67	28	3	12.4	41.8	5.2
PIPER J3	4202	2366	102	4.3	56.3	2.4
PIPER J4	240	96	5	5.4	40.2	2.2
PIPER J5	348	184	17	9.3	52.9	4.9
PIPER PA12	1361	864	65	7.6	63.5	4.8
PIPER PA14	109	90	7	7.9	82.8	6.5
PIPER PA15	197	105	5	5.0	53.5	2.7
PIPER PA16	394	248	12	4.8	63.1	3.0
PIPER PA17	120	59	9	15.3	48.8	7.5
PIPER PA18	3113	2443	120	4.9	78.5	3.8
PIPER PA20	486	308	20	6.5	63.3	4.1
PIPER PA22	5206	4021	194	4.8	77.2	3.7
PIPER PA23	3586	3422	119	3.5	95.4	3.3
PIPER PA24	3377	3215	77	2.4	95.2	2.3
PIPER PA25	1757	1476	86	5.8	98.0	4.9

TABLE 2-11. GENERAL AVIATION ACTIVE AIRCRAFT BY SDR AIRCRAFT MANUFACTURER/MODEL GROUP -
CY 1977 (11 of 14)

MANUFACTURE/MODEL GROUP	GROUP SIZE	ESTIMATE OF ACTIVE AIRCRAFT	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF PERCENT ACTIVE	STANDARD ERROR
PIPER PA28	18274	18232	70	0.4	99.8	0.4
PIPER PA30	1313	1290	25	2.0	98.3	1.9
PIPER PA31	1265	1265	0	0.0	100.0	0.0
PIPER PA31T	109	109	0	0.0	100.0	0.0
PIPER PA32	2763	2759	17	0.6	99.8	0.6
PIPER PA34	853	817	30	3.6	95.8	3.5
PIPER PA36	282	234	29	12.3	83.1	10.2
PITTS S1	139	130	6	4.5	93.9	4.2
PRATT PPG1	22	9	1	9.9	42.1	4.2
RAVEN RX6	119	109	7	6.8	91.8	6.2
RAVEN S50	105	93	5	5.2	88.8	4.6
RAVEN S55	203	186	8	4.2	93.0	3.9
RKWEIL112	500	478	6	1.2	95.6	1.1
RKWEIL1500	346	338	8	2.4	97.7	2.3
RKWEIL1520	66	62	1	1.9	93.8	1.8
RKWEIL1560	135	135	0	0.0	100.0	0.0
RKWEIL1680	406	362	20	5.6	89.2	5.0
RKWEIL1680TP	133	133	0	0.0	100.0	0.0
RKWEIL1690TP	158	158	0	0.0	100.0	0.0
RKWEILMA265	198	198	0	0.0	100.0	0.0
RYAN ST3	166	97	11	11.1	58.6	6.5

TABLE 2-11. GENERAL AVIATION ACTIVE AIRCRAFT BY SDR AIRCRAFT MANUFACTURER/MODEL GROUP -
CY 1977 (12 of 14)

MANUFACTURER/MODEL GROUP	GROUP SIZE	ESTIMATE OF ACTIVE AIRCRAFT	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF PERCENT ACTIVE	STANDARD ERROR
RYAN STA	32	12	1	9.9	37.0	3.7
SCHLEICH15	29	29	0	0.0	100.0	0.0
SCHLEICK8	23	22	1	2.7	94.4	2.5
SCHIEFFKA6	79	73	2	2.6	92.9	2.4
SCWZERSG1	704	569	38	6.7	80.8	5.4
SCWZERSG2	561	478	22	4.5	85.3	3.9
SCWZERSG3A	22	7	1	12.5	31.6	3.9
SEMCO CLNGE ^a	31	31	0	0.0	100.0	0.0
SENCCT	39	31	3	9.3	79.9	7.5
SKASKY55	85	17	3	19.6	20.2	4.0
SKASKY58	23	5	2	40.0	21.7	8.7
SLINDS100	362	329	15	4.5	90.8	4.1
SMITH 60J	338	326	23	6.9	96.5	6.7
SHIAS SA318	33	33	0	0.0	100.0	0.0
SOCATA5854	41	37	2	5.3	91.0	4.9
SPHETRCRUS	139	90	12	13.5	83.0	11.2
STNSON10	178	91	12	13.8	50.9	7.0
STNSCHL5	134	42	8	19.6	31.4	6.2
STNSCNSE9	27	9	1	15.5	35.0	5.4
STNSCNV77	104	33	2	6.8	32.1	2.2
STOLANMRC3	246	113	22	19.5	46.0	9.0

TABLE 2-11. GENERAL AVIATION ACTIVE AIRCRAFT BY SDR AIRCRAFT MANUFACTURER/MODEL GROUP -
CY 1977 (13 of 14)

MANUFACTURER/MODEL GROUP	GROUP SIZE	ESTIMATE OF ACTIVE AIRCRAFT	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF PERCENT ACTIVE	STANDARD ERROR
SUPAC LA	105	36	2	5.9	36.0	2.1
SUPAC V	26	5	2	39.0	19.1	7.5
SWINGNSA226	117	117	0	0.0	100.0	0.0
SWINGNSA26	99	99	0	0.0	100.0	0.0
TCRAFKD	265	118	3	2.7	44.5	1.2
TCRAFT19	92	92	0	0.0	100.0	0.0
TCRAFTIA	30	3	2	47.4	10.6	5.0
TCRAFTBC	1854	1056	60	5.7	57.0	3.3
TCRAFTBF	41	22	2	10.5	53.2	5.6
TCRAFTBI	232	90	9	9.9	38.9	3.9
TEJCC 11A	34	21	2	9.9	61.0	6.0
THUNDBAX7	21	21	0	0.0	100.0	0.0
TRYTEK65	325	150	22	14.5	46.0	6.7
TRYTEKK	32	10	2	18.9	32.6	6.2
UNIVACG1	682	471	36	7.6	69.1	5.3
UNIVAR108	2214	1375	86	6.2	62.1	3.9
UNIVAR415	2532	1946	146	7.5	76.8	5.7
VICKEF745	26	10	3	33.1	37.6	12.4
WACO ASO	28	9	1	9.5	33.3	3.2
WACO GK2	34	8	1	11.4	23.3	2.6
WACO E	31	4	2	55.7	14.4	8.0

TABLE 2-11. GENERAL AVIATION ACTIVE AIRCRAFT BY SDR AIRCRAFT MANUFACTURER/MODEL GROUP -
CY 1977 (14 of 14)

MANUFACTURER/MODEL GROUP	GROUP SIZE	ESTIMATE OF ACTIVE AIRCRAFT	STANDARD ERROR	PERCENT STANDARD ERROR	ESTIMATE OF PERCENT ACTIVE	STANDARD ERROR
WACO U2F7	154	76	9	11.8	49.1	5.8
WACO YK	40	12	1	11.6	29.2	3.4
WHELY201	62	62	0	0.0	100.0	0.0
TOTAL	212598	184294	1034	0.6	86.7	0.5

GENERAL AVIATION AVIONICS EQUIPMENT BY AIRCRAFT TYPE - CY 1977 (1 OF 8)

TABLE 2-12. GENERAL AVIATION AVIONICS EQUIPMENT BY AIRCRAFT TYPE - CY 1977 (2 of 8)

TYPE	VHF COMMUNICATIONS				TRANSPONDER EQUIPMENT				ILS RECEIVING EQUIPMENT																																																																																																											
	360 CH	720 CH	2+ SYS	MC COMM	4096 CODE	ALT ENC	HO TRANS	LOC	AKER REC	GLIDE SLOPE	MIS	NO ILS																																																																																																								
2 ENG 7+ SEATS ESTIMATED POPULATION X STANDARD ERROR ESTIMATED % OF TYPE	3069 A 42.6	3869 A 54.0	5054 B 5.5	393 A 81.8	6362 A 88.8	4951 A 69.1	798 B 11.2	6432 A 89.8	6286 A 87.8	6381 A 88.6	118 D 1.6	688 B 9.6																																																																																																								
TOTAL 2 ENG ESTIMATED POPULATION X STANDARD ERROR ESTIMATED % OF TYPE	11870 A 51.9	11330 A 49.6	20306 B 88.9	549 A 2.4	21520 A 94.2	16333 A 71.5	1330 B 5.8	21671 A 95.0	21262 A 93.0	20691 A 90.5	212 D 0.9	1079 B 4.7																																																																																																								
OTHER PISTON ESTIMATED POPULATION X STANDARD ERROR ESTIMATED % OF TYPE	222 A 63.1	102 A 29.0	244 B 69.4	38 A 11.0	235 A 66.8	74 B 21.2	117 B 33.2	235 A 66.6	244 A 69.3	230 A 65.2	0 D 0.0	97 B 27.5																																																																																																								
TOTAL PISTON ESTIMATED POPULATION X STANDARD ERROR ESTIMATED % OF TYPE	120939 A 61.8	47841 A 28.4	69753 A 45.8	33115 A 16.9	103063 A 51.6	37292 A 19.0	94786 A 48.4	93278 A 47.6	60722 A 47.6	62860 A 41.2	631 D 31.9	97240 B 0.3																																																																																																								
TURBOPROP 2 ENG 1-12 SEATS ESTIMATED POPULATION X STANDARD ERROR ESTIMATED % OF TYPE	533 B 23.2	1818 A 79.2	2131 A 92.9	1 0.1	2290 A 99.8	2255 A 98.3	5 0.2	2252 A 98.2	2252 A 98.2	2239 A 97.5	10 D 0.4	42 B 1.6																																																																																																								
2 ENG 13+ SEATS ESTIMATED POPULATION X STANDARD ERROR ESTIMATED % OF TYPE	138 C 23.8	450 A 77.5	567 A 97.7	0 0.0	581 A 100.0	464 A 79.9	0 0.0	561 A 100.0	573 A 98.7	581 A 100.0	14 D 2.6	0 B 0.0																																																																																																								
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TABLE 2-12. GENERAL AVIATION AVIONICS EQUIPMENT BY AIRCRAFT TYPE - CY 1977 (3 of 8)

TYPE	VHF COMMUNICATIONS			TRANSPONDER EQUIPMENT			ILS RECEIVING EQUIPMENT					
	360 CH	720 CH	2+ SYS	NO COMB	4096 CODE	ALT ENC	NO TRANS	LOC	HHR REC	GLIDE SLOPE	MIS	NO ILS
TOTAL 2 ENG												
ESTIMATED POPULATION	671	2268	2698	1	2671	2720	5	2833	2819	24	42	
% STANDARD ERROR	B	A	A	D	A	A	D	A	A	D	D	
ESTIMATED % OF TYPE	23.4	78.9	93.8	0.1	99.8	94.6	0.2	98.5	98.3	0.9	1.5	
CITER TUBSCPACP												
ESTIMATED PCPOPULATION	54	41	79	1	89	65	6	86	83	0	9	
% STANDARD ERROR	A	B	A	A	A	A	C	A	A	A	C	
ESTIMATED % OF TYPE	55.3	42.7	81.6	1.0	91.4	67.0	6.6	88.0	85.0	0.0	9.9	
TOTAL TURBOFACP												
ESTIMATED POPULATION	726	2310	2778	2	2960	2785	11	2919	2909	24	52	
% STANDARD ERROR	B	A	D	A	A	D	D	A	A	D	D	
ESTIMATED % OF TYPE	24.4	77.7	93.4	0.1	99.5	93.7	0.4	98.2	97.8	0.8	1.7	
TURBOJET												
2 BIG												
ESTIMATED POPULATION	412	1644	1861	15	1978	1945	15	1978	1972	16	19	
% STANDARD ERROR	B	A	A	D	A	A	D	A	A	D	D	
ESTIMATED % OF TYPE	20.7	82.4	93.3	0.8	99.2	97.5	0.8	99.0	98.9	0.8	1.0	
CITER												
ESTIMATED POPULATION	145	298	378	62	401	349	97	382	367	14	114	
% STANDARD ERROR	B	A	A	B	A	A	B	A	A	D	A	
ESTIMATED % OF TYPE	29.2	59.8	75.9	12.5	80.5	70.1	19.5	76.6	73.7	74.3	23.0	
TOTAL TURBOJET												
ESTIMATED POPULATION	557	1942	2240	78	2379	2295	113	2357	2342	30	134	
% STANDARD ERROR	A	A	C	A	A	A	B	A	A	D	B	
ESTIMATED % OF TYPE	22.4	77.9	89.8	3.1	95.4	92.0	4.5	94.5	93.8	93.9	1.2	
* STANDARD ERROR ----- * GREATER THAN * LESS THAN * OR * EQUAL TO ----- * 0 % * 10 % * 20 % * 30 % * 40 %												

TABLE 2-12. GENERAL AVIATION AVIONICS EQUIPMENT BY AIRCRAFT TYPE - CY 1977 (4 of 8)

TYPE	VHF COMMUNICATIONS				TRANSPONDER EQUIPMENT				ILS RECEIVING EQUIPMENT			
	360 CH	720 CH	2+ SYS	NO COMM	4096 CODE	ALT ENC	NO TRANS	LOC	MEER BBC	GLIDE SLOPE	MIS	NO ILS
TOTAL FIXED WING												
ESTIMATED POPULATION	122223	52094	98773	33195	106403	42374	94911	90555	85972	67705	687	97426
% STANDARD ERROR	A	A	A	A	A	A	A	A	A	A	D	A
ESTIMATED % OF TYPE	60.7	25.9	47.1	16.5	52.9	21.0	47.1	49.0	42.7	33.6	0.3	48.4
ROTORCRAFT												
PICSON												
ESTIMATED POPULATION	1952	745	369	1960	579	30	4072	92	22	15	1	4551
% STANDARD ERROR	A	C	D	A	C	D	A	D	D	D	D	A
ESTIMATED % OF TYPE	42.0	16.0	8.4	42.1	12.5	0.7	87.5	2.0	0.5	0.3	0.0	97.8
TURBINE												
ESTIMATED POPULATION	901	1378	948	149	1153	175	1039	681	373	289	0	1502
% STANDARD ERROR	B	A	B	D	B	D	B	C	C	D	A	A
ESTIMATED % OF TYPE	41.1	62.8	43.3	6.8	52.6	8.0	47.4	31.1	17.0	13.2	0.0	68.5
TOTAL ROTORCRAFT												
ESTIMATED POPULATION	2854	2123	1338	2109	1732	206	5112	773	395	305	1	6054
% STANDARD ERROR	A	A	B	A	B	D	A	B	C	D	D	A
ESTIMATED % OF TYPE	41.7	31.0	19.5	30.8	25.3	3.0	74.7	11.3	5.8	4.5	0.0	88.4
OTHER												
ESTIMATED POPULATION	1941	65	14	2430	52	16	4382	6	4	0	0	4428
% STANDARD ERROR	A	D	D	A	D	D	A	D	A	A	A	A
ESTIMATED % OF TYPE	43.8	1.5	0.3	54.8	1.2	0.4	98.8	0.1	0.1	0.0	0.0	99.9
TOTAL AIRCRAFT												
ESTIMATED POPULATION	127019	54283	96125	37735	108189	42597	104045	99335	86372	68011	688	107999
% STANDARD ERROR	A	A	A	A	A	A	A	A	A	A	D	A
ESTIMATED % OF POP	59.7	25.5	45.2	17.7	50.9	20.0	49.1	46.7	40.6	32.0	0.3	50.8

NOTE : COLUMN SUMMATIONS MAY DIFFER FROM PRINTED TOTALS DUE TO ESTIMATION PROCEDURES.

STANDARD ERROR	CODE
GREATER THAN	
LESS THAN	
THAN	
0 %	10 %
10 %	20 %
20 %	30 %
30 %	D

TABLE 2-12. GENERAL AVIATION AVIONICS EQUIPMENT BY AIRCRAFT TYPE - CY 1977 (5 OF 8)

TYPE	VOR 100CH	VOR 200CH	2° RCVR	ADP	NAVIGATION EQUIPMENT						
					DME	RNAV	LNAV	AUTOPTR	RADAR ALT	STMR RADAR	NO RADAR
FIXED WING											
PISON											
1 ENG 1-3 SEATS											
ESTIMATED POPULATION	29650	10440	4356	3076	273	764	51	87	33	30	34879
STANDARD ERROR	1	B	B	D	D	D	D	D	D	D	1
ESTIMATED % OF TYPE	39.8	14.0	5.9	6.1	0.4	1.1	0.1	0.1	0.0	0.0	46.8
1 ENG 4+ SEATS											
ESTIMATED POPULATION	46565	51970	65916	622318	22035	3495	411	33995	1570	361	3796
STANDARD ERROR	1	A	A	A	A	B	D	C	D	D	1
ESTIMATED % OF TYPE	47.4	52.9	67.1	63.5	22.4	3.5	0.4	31.6	1.6	0.3	3.9
TOTAL 1 ENG											
ESTIMATED POPULATION	76216	62411	70273	65395	22308	42270	462	34072	1603	371	38676
STANDARD ERROR	1	A	A	A	A	B	D	A	C	D	1
ESTIMATED % OF TYPE	44.1	36.1	40.7	37.9	12.9	2.5	0.3	19.7	0.9	0.2	22.4
2 ENG 1-6 SEATS											
ESTIMATED POPULATION	6309	9790	14646	15019	13276	2686	135	13338	2617	3575	216
STANDARD ERROR	1	A	A	A	A	B	D	A	B	D	1
ESTIMATED % OF TYPE	40.2	62.4	93.3	95.7	84.6	17.1	0.9	85.0	16.7	22.5	1.4
2 ENG 7+ SEATS											
ESTIMATED POPULATION	2250	4588	6156	6282	5344	1464	103	5066	1390	3161	439
STANDARD ERROR	1	A	A	A	A	B	D	A	B	D	1
ESTIMATED % OF TYPE	31.4	63.5	86.0	87.7	74.6	20.2	1.4	70.5	19.4	44.1	6.1
TOTAL 2 ENG											
ESTIMATED POPULATION	8560	14338	20802	21301	18620	4130	238	18386	4008	6736	656
STANDARD ERROR	1	A	A	A	A	A	C	A	A	B	1
ESTIMATED % OF TYPE	37.5	62.7	91.0	93.2	81.5	18.1	1.0	80.5	17.5	29.5	2.9

TABLE 2-12. GENERAL AVIATION AVIONICS EQUIPMENT BY AIRCRAFT TYPE - CY 1977 (6 of 8)

TYPE	VOR 100CH	VOR 200CH	2+ RCVR	NAVIGATION EQUIPMENT					RADAR ALT	UTM RADAR	NO RADAR
				DME	IRAV	LNAV	AUTOPLT				
OTHER PISTON											
ESTIMATED POPULATION	151	160	230	276	124	6	25	85	43	114	37
X STANDARD ERROR	A	A	A	A	A	D	C	A	B	A	C
ESTIMATED % OF TYPE	42.8	45.6	65.4	76.3	35.2	2.0	7.3	24.3	12.4	32.4	10.5
TOTAL PISTON											
ESTIMATED POPULATION	84927	76910	91306	88973	41053	8407	727	52593	5656	7222	39369
X STANDARD ERROR	A	A	A	A	A	A	C	A	B	A	A
ESTIMATED % OF TYPE	43.4	39.3	46.6	48.4	21.0	4.3	0.4	26.8	2.9	3.7	20.1
TURBOPROP											
2 ENG 1-12 SEATS											
ESTIMATED POPULATION	379	1914	2269	2264	2226	1241	107	2219	1796	2055	14
X STANDARD ERROR	B	A	A	A	A	A	D	A	A	A	B
ESTIMATED % OF TYPE	16.5	83.4	98.9	98.7	97.0	56.1	4.7	96.7	78.3	89.6	0.7
2 ENG 13+ SEATS											
ESTIMATED POPULATION	163	425	565	570	521	123	58	258	238	320	0
X STANDARD ERROR	C	A	A	A	A	D	C	A	B	A	A
ESTIMATED % OF TYPE	28.2	73.2	97.4	98.2	89.8	21.2	10.0	48.5	41.0	72.5	0.0
TOTAL 2 ENG											
ESTIMATED POPULATION	543	2340	2835	2835	2797	1365	165	2877	2038	2876	14
X STANDARD ERROR	B	A	A	A	A	A	C	A	A	A	B
ESTIMATED % OF TYPE	18.9	81.4	98.6	98.6	95.5	47.5	5.8	86.2	70.7	86.1	0.5
OTHER TURBOPROP											
ESTIMATED POPULATION	29	62	84	92	83	11	20	51	49	68	3
X STANDARD ERROR	B	A	A	A	A	D	C	A	B	A	B
ESTIMATED % OF TYPE	30.4	64.0	86.4	94.4	85.2	11.8	20.8	52.3	50.3	69.4	3.5
* STANDARD ERROR CODE											
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TABLE 2-12. GENERAL AVIATION AVIONICS EQUIPMENT BY AIRCRAFT TYPE - CY 1977 (7 of 8)

TYPE	NAVIGATION EQUIPMENT										
	VOR 100CH	VOR 200CH	2° BCUB	ADF	DME	IRNAV	LORNAV	AUTOPLT	RADAR ALT	WTHR RADAR	NO NAVEQ
TOTAL TURBOPROP											
ESTIMATED POPULATION	573	2403	2919	2928	2831	1376	185	2529	2083	2544	18
% STANDARD ERROR	.B	.A	.A	.A	.A	.A	.C	.A	.A	.A	.D
ESTIMATED % OF TYPE	19.3	80.8	98.2	98.5	95.2	96.3	6.3	85.0	70.1	85.6	0.6
TURBOJET											
2 ENG											
ESTIMATED POPULATION	219	1801	1954	1974	1962	454	611	1971	1728	1944	15
% STANDARD ERROR	.B	.A	.A	.A	.A	.A	.B	.A	.A	.A	.D
ESTIMATED % OF TYPE	11.0	90.3	98.0	99.0	98.4	22.8	30.7	98.8	86.7	97.4	0.8
OTHER											
ESTIMATED POPULATION	92	310	340	371	353	47	218	326	269	296	93
% STANDARD ERROR	.B	.A	.A	.A	.A	.A	.C	.A	.A	.A	.B
ESTIMATED % OF TYPE	18.5	62.3	68.2	74.5	70.9	9.5	43.8	65.5	56.0	59.4	18.7
TOTAL TURBOFAN											
ESTIMATED POPULATION	311	2111	2295	2386	2316	501	630	2298	1998	2240	103
% STANDARD ERROR	.B	.A	.A	.A	.A	.A	.B	.A	.A	.A	.B
ESTIMATED % OF TYPE	12.5	84.7	92.0	94.1	92.9	20.1	33.3	92.2	80.1	89.8	0.4
TOTAL FIXED WING											
ESTIMATED POPULATION	85812	81425	96521	92248	46201	10286	1783	57370	9738	12007	39497
% STANDARD ERROR	.A	.A	.A	.A	.A	.A	.B	.A	.A	.A	.A
ESTIMATED % OF TYPE	42.6	40.4	47.9	45.8	22.9	5.1	0.9	28.5	4.8	6.0	19.6
MOTORCRAFT											
PICACH											
ESTIMATED POPULATION	323	150	16	169	25	14	12	2	16	13	4071
% STANDARD ERROR	.C	.D	.D	.D	.D	.D	.D	.D	.D	.D	.A
ESTIMATED % OF TYPE	6.9	3.2	0.4	3.6	0.5	0.3	0.3	0.1	0.3	0.3	87.5

* STANDARD ERROR CODE
** GREATER THAN *
** LESS THAN .
** OR :
** EQUAL TO -

-	-	-	-	-	-	-	-	-	-	-
0 S	10 S	20 S	30 S	40 S	50 S	60 S	70 S	80 S	90 S	100 S
0 S	10 S	20 S	30 S	40 S	50 S	60 S	70 S	80 S	90 S	100 S
0 S	10 S	20 S	30 S	40 S	50 S	60 S	70 S	80 S	90 S	100 S
0 S	10 S	20 S	30 S	40 S	50 S	60 S	70 S	80 S	90 S	100 S
0 S	10 S	20 S	30 S	40 S	50 S	60 S	70 S	80 S	90 S	100 S

TABLE 2-12. GENERAL AVIATION AVIONICS EQUIPMENT BY AIRCRAFT TYPE - CY 1977 (8 of 8)

TYPE	NAVIGATION EQUIPMENT						RADAR ALT	STAN RADAR	NO NAV
	VOR 100CH	VOR 200CH	2+ RCVR	ADF	DME	IRNAV			
TURBINE									
ESTIMATED POPULATION	386	67%	481	1360	371	122	49	38	123
% STANDARD ERROR	C	B	A	C	D	C	D	D	440
ESTIMATED % OF TYPE	17.6	39.9	22.0	62.0	16.9	5.6	2.3	1.7	1.3
TOTAL ROTORCRAFT									
ESTIMATED POPULATION	709	1025	497	1530	396	136	62	49	160
% STANDARD ERROR	B	B	C	C	C	D	D	D	42
ESTIMATED % OF TYPE	10.4	15.0	7.3	22.4	5.6	2.0	0.9	0.6	65.9
OTHER									
ESTIMATED POPULATION	35	6	4	4	0	1	0	22	0
% STANDARD ERROR	D	D	D	D	A	D	D	A	4366
ESTIMATED % OF TYPE	0.8	0.2	0.1	0.1	0.0	0.0	0.0	0.5	0.1
TOTAL AIRCRAFT									
ESTIMATED POPULATION	66556	82459	97024	93782	46597	10626	1805	57436	9878
% STANDARD ERROR	A	A	A	A	A	A	B	A	12054
ESTIMATED % OF POP	40.7	36.8	45.6	44.1	21.9	4.9	0.6	27.0	4.6
									5.7
									22.8

NOTE : COLUMN SUMMATIONS MAY DIFFER FROM PRINTED TOTALS DUE TO ESTIMATION PROCEDURES.

STANDARD ERROR	CODE		
	GREATERTHAN OR EQUALTO	LESS THAN	-----
0 X	10 X	A	
10 X	20 X	B	
20 X	30 X	C	
30 X	30 X	D	

TABLE 2-13. GENERAL AVIATION AVIONICS EQUIPMENT BY STATE OF BASED AIRCRAFT - CY 1977
(1 of 17)

STATE	VHF COMMUNICATIONS				TRANSPONDER EQUIPMENT				ILS RECEIVING EQUIPMENT			
	360 CH	720 CH	2+ SYS	NO COMM	4096 CODE	ALZ ENC	NO TRANS	LOC	MEAN DEC	GLIDE SLOPE	MLS	NO ILS
ALABAMA												
ESTIMATED POPULATION	1324	806	1096	504	1836	605	747	1506	1366	1256	1	1065
% STANDARD ERROR	D	D	D	D	D	C	C	D	D	D	D	D
ESTIMATED % OF STATE	48.1	29.1	39.6	18.2	66.2	21.6	27.0	54.3	49.9	45.3	0.1	38.4
ALASKA												
ESTIMATED POPULATION	4697	652	1144	735	877	139	5183	1282	809	567	0	8682
% STANDARD ERROR	A	C	B	B	B	D	A	B	B	C	A	A
ESTIMATED % OF STATE	80.0	11.1	19.5	12.5	14.9	2.4	88.3	21.8	13.8	9.3	0.0	79.1
ARIZONA												
ESTIMATED POPULATION	3038	1089	2499	792	2174	552	2457	2837	1989	1699	0	2033
% STANDARD ERROR	B	D	C	C	C	D	B	C	C	C	B	B
ESTIMATED % OF STATE	66.4	23.8	54.6	17.3	47.5	12.1	53.7	53.3	43.5	37.1	0.0	54.4
ARKANSAS												
ESTIMATED POPULATION	1407	725	1279	617	1474	637	1210	1222	1269	987	13	1272
% STANDARD ERROR	C	D	C	D	C	C	C	D	C	D	C	C
ESTIMATED % OF STATE	48.5	25.0	44.1	21.3	50.8	22.0	41.7	42.2	44.5	38.1	0.5	43.9
CALIFORNIA P												
ESTIMATED POPULATION	16556	7072	12535	4909	14116	5546	13616	12951	11259	8874	83	14088
% STANDARD ERROR	A	B	A	A	A	B	A	A	B	B	D	A
ESTIMATED % OF STATE	59.7	25.5	45.2	17.7	50.9	20.0	49.1	46.7	40.6	32.0	0.3	50.8

P : PRELIMINARY RESULTS

STANDARD ERROR	CODE
GREATER THAN OR EQUAL TO	LESS THAN
0.5	10 K
10 K	20 K
20 K	30 K
30 K	D

TABLE 2-13. GENERAL AVIATION AVIONICS EQUIPMENT BY STATE OF BASED AIRCRAFT - CY 1977
(2 of 17)

STATE	VHF COMMUNICATIONS				TRANSPONDER EQUIPMENT				TTS RECEIVING EQUIPMENT			
	360 CB	720 CB	2* STS	NO COMM	4096 CODE	AFT REC	NO TRANS	LOC	HEM REC	GLIDE SLOPE	HLS	HO TLS
COLORADO ESTIMATED POPULATION % STANDARD AIRCRAFT ESTIMATED % OF STATE	2394 C 61.5	1092 C 26.0	1669 1 16.5	641 C 16.5	2197 C 55.1	740 C 19.0	1870 C 48.0	1693 C 43.5	1667 C 37.7	1219 C 31.3	7 0.2	2293 C 56.9
CONNECTICUT ESTIMATED POPULATION % STANDARD AIRCRAFT ESTIMATED % OF STATE	957 D 55.8	459 D 26.8	800 D 16.5	268 D 16.5	839 D 46.9	382 D 22.3	800 D 46.7	851 D 46.3	793 D 33.2	569 D 33.2	13 0.8	772 D 45.0
DELAWARE ESTIMATED POPULATION % STANDARD AIRCRAFT ESTIMATED % OF STATE	493 D 66.7	215 D 26.2	444 D 15.8	117 D 15.8	532 D 69.7	232 D 30.4	255 D 33.5	479 D 62.8	429 D 56.2	381 D 56.0	4 0.5	302 D 39.7
DC ESTIMATED POPULATION % STANDARD AIRCRAFT ESTIMATED % OF STATE	33 D 20.0	111 D 66.0	137 D 81.2	14 D 8.3	145 D 86.0	123 D 73.2	14 D 8.3	141 D 83.5	141 D 83.5	141 D 83.5	0 0.6	18 10.9
FLORIDA P ESTIMATED POPULATION % STANDARD AIRCRAFT ESTIMATED % OF STATE	6166 A 59.7	2634 B 25.5	4668 B 45.2	1828 B 17.7	5257 B 50.9	2066 B 20.0	5071 B 49.1	4823 B 46.7	4193 B 40.6	3305 B 32.0	31 0.3	5247 A 50.8
GEORGIA ESTIMATED POPULATION % STANDARD AIRCRAFT ESTIMATED % OF STATE	2495 C 59.2	1038 C 24.6	1934 C 45.9	829 C 19.7	2365 C 56.1	701 C 16.6	1779 C 42.2	1946 C 46.2	1777 C 42.2	1184 C 26.1	85 1.1	2121 C 56.4
KANSAS ESTIMATED POPULATION % STANDARD AIRCRAFT ESTIMATED % OF STATE	366 D 59.0	184 D 29.0	313 D 50.5	79 D 12.8	378 D 60.9	18 D 3.1	244 D 39.4	314 D 50.6	268 D 46.4	262 D 42.2	0 0.8	293 D 47.2

P : PRELIMINARY RESULTS

STANDARD ERROR	CODE
GREATER THAN THAN EQUAL TO	• • •
0 %	• • •
10 %	• • •
20 %	• • •
30 %	• • •
30 %	D

TABLE 2-13. GENERAL AVIATION AVIONICS EQUIPMENT BY STATE OF BASED AIRCRAFT - CY 1977
(3 of 17)

STATE	VHF COMMUNICATIONS				TRANSPONDER EQUIPMENT			ILS RECEIVING EQUIPMENT				
	360 CH	720 CH	2+ SIS	NO COMM	4096 CODE	ALT ENC	NO TRANS	LOC	MEER BBC	GLIDE SLOPES	MLS	NO ILS
IDAHO												
ESTIMATED POPULATION	1674	492	995	495	1162	287	1138	612	582	0	1690	C
% STANDARD ERROR	C	D	D	D	D	D	C	D	D	A	4	
ESTIMATED % OF STATE	70.6	20.8	42.0	17.1	49.9	12.1	47.9	48.0	34.3	22.9	0.0	46.0
ILLINOIS P												
ESTIMATED POPULATION	4719	2016	3573	1399	4023	1581	3881	3691	3209	2529	24	4015
% STANDARD ERROR	B	C	B	B	C	C	B	B	B	B	D	B
ESTIMATED % OF STATE	59.7	25.5	45.2	17.7	50.9	20.0	49.1	46.7	40.6	32.0	0.3	50.8
INDIANA P												
ESTIMATED POPULATION	2590	1106	1961	768	2298	868	2130	2026	1761	1388	13	2204
% STANDARD ERROR	C	D	C	C	C	C	C	C	C	C	D	C
ESTIMATED % OF STATE	59.7	25.5	45.2	17.7	50.9	20.0	49.1	46.7	40.6	32.0	0.3	50.8
IOWA												
ESTIMATED POPULATION	2355	873	1569	821	1803	681	2034	1557	1246	979	3	2169
% STANDARD ERROR	C	D	C	D	C	D	C	C	C	C	D	C
ESTIMATED % OF STATE	60.8	22.5	40.5	21.2	46.6	16.6	52.5	40.2	32.2	25.3	0.1	56.0
KANSAS												
ESTIMATED POPULATION	2873	814	2558	886	2505	924	1852	2405	2170	1482	216	1990
% STANDARD ERROR	C	D	C	C	C	D	C	C	C	C	D	B
ESTIMATED % OF STATE	61.7	17.5	54.9	19.0	53.8	19.8	39.8	51.6	46.6	31.8	4.7	46.8
KENTUCKY												
ESTIMATED POPULATION	1029	354	712	196	860	417	681	789	649	548	1	721
% STANDARD ERROR	D	D	D	D	D	D	D	D	D	D	D	B
ESTIMATED % OF STATE	66.9	23.1	46.4	12.8	56.0	27.2	46.3	51.4	42.3	35.7	0.1	47.0
LOUISIANA												
ESTIMATED POPULATION	1977	1373	1858	863	2018	767	1636	1733	1673	1367	0	1791
% STANDARD ERROR	C	C	C	C	C	C	C	C	C	C	A	B
ESTIMATED % OF STATE	50.5	36.9	50.0	23.2	58.3	20.6	46.0	46.6	45.0	36.8	0.0	48.2

P : PRELIMINARY RESULTS

STANDARD ERROR	CODE
GREATER THAN	-----
LESS THAN OR EQUAL TO	-----
0 %	10 %
10 %	20 %
20 %	30 %
30 %	D

TABLE 2-13. GENERAL AVIATION AVIONICS EQUIPMENT BY STATE OF BASED AIRCRAFT - CY 1977
(4 of 17)

STATE	VHF COMMUNICATIONS				TRANSPONDER EQUIPMENT				ILS RECEIVING EQUIPMENT			
	360 CH	720 CH	24 SRS	NO COM	4096 CODE	ALT ENC	NO TRANS	LOC	MEET REC	GLIDE STOPZ	MIS	NO ILS
MAINE												
ESTIMATED POPULATION	745	176	332	348	344	125	887	369	305	212	3	843
X STANDARD ERROR	D	D	D	D	D	D	D	D	D	D	D	D
ESTIMATED % OF STATE	61.2	16.5	27.3	28.6	28.2	10.3	72.8	30.4	25.1	17.5	0.3	69.2
MARYLAND												
ESTIMATED POPULATION	2049	561	1312	345	1614	498	1262	1455	1322	979	3	1286
X STANDARD ERROR	C	D	C	D	C	D	D	C	D	D	D	C
ESTIMATED % OF STATE	72.0	19.7	46.2	12.2	56.8	17.5	44.4	51.2	46.5	34.5	0.1	45.3
MASSACHUSETTS												
ESTIMATED POPULATION	1739	1037	1291	330	1513	616	1319	1741	1229	863	0	1033
X STANDARD ERROR	C	D	D	C	C	D	C	C	C	B	A	D
ESTIMATED % OF STATE	61.8	36.9	45.9	11.8	53.8	21.9	46.9	61.9	43.7	30.7	0.0	36.7
MICHIGAN												
ESTIMATED POPULATION	5904	760	3863	1144	2917	926	4864	2774	2735	1692	17	4781
X STANDARD ERROR	B	C	C	B	B	C	B	B	B	C	D	B
ESTIMATED % OF STATE	76.9	9.9	50.3	14.9	38.0	12.1	63.3	36.1	35.6	28.6	0.2	62.3
MINNESOTA												
ESTIMATED POPULATION	2354	1323	1458	1531	2248	803	2951	1368	1228	1113	23	3785
X STANDARD ERROR	B	D	C	C	C	D	B	C	C	D	D	B
ESTIMATED % OF STATE	45.9	25.8	28.4	29.8	43.8	15.6	57.5	26.7	23.9	21.7	0.5	73.7
MISSISSIPPI												
ESTIMATED POPULATION	1124	426	827	697	955	276	1173	798	729	532	0	1283
X STANDARD ERROR	D	D	D	C	C	D	C	D	D	D	A	C
ESTIMATED % OF STATE	50.7	19.2	37.3	31.4	43.1	12.4	52.9	36.0	32.9	20.0	0.0	57.8
MISSOURI												
ESTIMATED POPULATION	2628	1293	1917	909	2328	616	2278	2359	1859	1688	3	2216
X STANDARD ERROR	C	D	C	C	C	D	C	C	C	C	D	C
ESTIMATED % OF STATE	57.4	28.3	41.9	19.9	50.9	13.5	49.8	51.5	40.6	36.8	0.1	46.4

STANDARD ERROR	CODE
GREATER THAN	-----
LESS THAN OR EQUAL TO	-----
0 %	10 %
10 %	20 %
20 %	30 %
30 %	D

**TABLE 2-13. GENERAL AVIATION AVIONICS EQUIPMENT BY STATE OF BASED AIRCRAFT - CY 1977
(5 of 17)**

STATE	TRANSPONDER EQUIPMENT												ILS RECEIVING EQUIPMENT		
	360 CH	720 CH	2+ SYS	NO COMM	4096 CODE	ALT ENC	NO TRANS	LOC	BKER DEC	GLIDE SLOPE	HLS	NO TLS			
MONTANA															
ESTIMATED POPULATION	1527	428	883	581	1046	265	1841	1015	826	632	6	182			
% STANDARD ERROR	C	D	C	C	C	D	C	C	D	D	D	D			
ESTIMATED % OF STATE	62.9	17.6	36.4	24.0	43.1	10.9	59.3	41.8	36.0	26.1	0.3	58.			
NEBRASKA															
ESTIMATED POPULATION	1301	804	1220	581	1224	433	1364	1325	1061	818	10	122			
% STANDARD ERROR	C	D	C	C	C	D	C	C	C	D	D	D			
ESTIMATED % OF STATE	49.0	30.3	46.0	21.9	46.5	16.3	51.4	49.9	39.2	30.8	0.4	46.			
NEVADA															
ESTIMATED POPULATION	1121	460	837	155	1188	337	496	736	738	576	0	84			
% STANDARD ERROR	C	D	D	D	D	D	C	D	D	D	D	D			
ESTIMATED % OF STATE	64.7	26.6	48.3	9.0	68.6	19.5	28.7	42.5	42.4	33.3	0.0	48.			
NEW HAMPSHIRE															
ESTIMATED POPULATION	679	255	481	230	552	265	598	609	509	404	13	52			
% STANDARD ERROR	D	D	D	D	D	D	D	D	D	D	D	D			
ESTIMATED % OF STATE	57.8	21.8	40.9	19.6	47.0	22.6	50.9	51.8	43.4	34.4	1.2	45.			
NEW JERSEY															
ESTIMATED POPULATION	2984	1060	2670	449	2932	1474	1518	2500	2497	1986	14	183			
% STANDARD ERROR	C	D	C	C	C	C	C	C	C	C	C	C			
ESTIMATED % OF STATE	66.0	23.5	59.0	9.9	64.8	32.6	33.6	55.3	55.2	43.9	0.3	40.			
NEW MEXICO															
ESTIMATED POPULATION	1278	451	1057	267	1085	530	899	1079	790	659	0	87			
% STANDARD ERROR	C	D	C	D	C	D	C	C	C	D	1	45.			
ESTIMATED % OF STATE	66.1	23.4	54.7	13.9	56.1	27.5	46.5	55.9	40.9	34.1	0.0	45.			
NEW YORK P															
ESTIMATED POPULATION	3878	1656	2936	1150	3306	1299	3189	3033	2637	2078	19	329			
% STANDARD ERROR	B	C	B	B	B	C	A	B	B	C	C	D			
ESTIMATED % OF STATE	59.7	25.5	45.2	17.7	50.9	20.0	49.1	46.7	40.6	32.0	0.3	50.			

P : PRELIMINARY RESULTS

STANDARD ERROR	CODE
GREATER THAN	LESS THAN OR EQUAL TO
0 %	10 %
10 %	20 %
20 %	30 %
	30 %

TABLE 2-13. GENERAL AVIATION AVIONICS EQUIPMENT BY STATE OF BASED AIRCRAFT - CY 1977
(6 of 17)

STATE	VHF COMMUNICATIONS						TRANSPODERS EQUIPMENT						ILS RECEIVING EQUIPMENT					
	360 CH	720 CH	2+ SIS	NO CONN	4096 CODE	ALT ENC	HO TRANS	LOC	AKER DEC	GLIDE SLOPE	SLS	SLS	NO ILS	ILS				
NORTH CAROLINA																		
ESTIMATED POPULATION	2463	1340	1942	611	2410	1018	1782	2357	1880	1464	11	1796						
% STANDARD ERROR	C	C	C	C	D	C	C	C	C	C	C	C	D	C				
ESTIMATED % OF STATE	58.2	31.6	45.9	14.4	56.9	24.0	42.1	55.7	44.4	34.6	0.3	42.4						
NORTH DAKOTA																		
ESTIMATED POPULATION	703	395	590	485	601	190	977	491	439	335	0	1050						
% STANDARD ERROR	D	D	C	D	D	D	C	D	D	D	A	D						
ESTIMATED % OF STATE	42.1	23.6	35.3	29.0	36.0	11.4	58.5	29.4	26.3	20.1	0.0	62.9						
OHIO																		
ESTIMATED POPULATION	5196	1970	3850	1254	3914	2119	4329	3572	3278	2843	1	4296						
% STANDARD ERROR	B	B	B	B	B	B	B	B	B	B	D	D	B	C				
ESTIMATED % OF STATE	62.9	23.8	46.6	15.2	47.4	25.6	52.4	43.2	39.7	34.4	0.0	52.0						
OKLAHOMA																		
ESTIMATED POPULATION	2770	952	2182	994	2182	872	2379	2175	2013	1524	16	2120						
% STANDARD ERROR	C	D	C	C	B	B	C	C	C	C	D	C	C	D	C			
ESTIMATED % OF STATE	60.9	18.7	48.0	21.9	48.0	19.2	52.3	47.8	44.3	33.5	0.4	46.6						
OREGON																		
ESTIMATED POPULATION	2798	1591	1721	976	3031	1226	2258	1807	1885	1151	0	3274						
% STANDARD ERROR	B	D	C	B	C	C	B	B	B	B	A	B	C	A	B			
ESTIMATED % OF STATE	58.2	30.8	33.3	18.9	58.7	23.8	43.8	35.0	36.5	22.3	0.0	63.4						
PENNSYLVANIA																		
ESTIMATED POPULATION	3888	1163	2248	1154	2602	1530	3570	2601	2268	1822	0	3543						
% STANDARD ERROR	B	D	C	B	B	B	C	B	B	C	A	C	A	B				
ESTIMATED % OF STATE	61.9	18.5	35.8	18.4	41.4	24.4	56.8	41.4	36.1	29.0	0.0	56.4						
RODE ISLAND																		
ESTIMATED POPULATION	208	67	149	48	184	89	145	163	143	111	0	161						
% STANDARD ERROR	D	D	D	D	D	D	D	D	D	D	D	D	A	D				
ESTIMATED % OF STATE	61.4	25.7	44.1	14.4	54.5	26.4	43.0	48.2	42.5	32.9	0.0	47.7						

STANDARD ERROR		CODE		CODE														
GREATER THAN		LESS THAN OR EQUAL TO		GREATER THAN														
0 %		10 %		0 %		10 %		0 %		10 %		0 %		10 %		0 %		10 %
10 %		20 %		10 %		20 %		10 %		20 %		10 %		20 %		10 %		20 %
20 %		30 %		20 %		30 %		20 %		30 %		20 %		30 %		20 %		30 %
30 %		40 %		30 %		40 %		30 %		40 %		30 %		40 %		30 %		40 %

TABLE 2-13. GENERAL AVIATION AVIONICS EQUIPMENT BY STATE OF BASED AIRCRAFT - CY 1977
(7 of 17)

STATE	VHF COMMUNICATIONS				TRANSPONDER EQUIPMENT				ILS RECEIVING EQUIPMENT			
	360 CH	720 CH	2+ STS	NO COMB	40% CODE	ALT REC	NO TRANS	LOC	MAIN REC	GLIDE SLOPE	NLS	HO ILS
SOUTH CAROLINA												
ESTIMATED POPULATION	1128	320	798	389	894	410	925	679	638	490	2	1105
% STANDARD ERROR	D	D	D	D	D	D	D	D	D	D	D	D
ESTIMATED % OF STATE	64.8	19.0	45.8	22.4	51.3	23.6	53.1	39.0	36.6	28.2	0.2	63.5
SOUTH DAKOTA												
ESTIMATED POPULATION	729	231	487	372	393	137	992	502	370	355	0	668
% STANDARD ERROR	D	D	D	D	D	D	D	D	D	D	D	D
ESTIMATED % OF STATE	55.2	16.2	34.1	26.1	27.6	9.6	69.4	35.1	25.9	24.9	0.6	60.8
TENNESSEE												
ESTIMATED POPULATION	1505	995	1509	505	1824	624	1166	1733	1378	1035	0	1169
% STANDARD ERROR	C	D	C	D	C	C	D	C	C	C	A	D
ESTIMATED % OF STATE	50.7	33.5	50.8	17.0	61.4	21.0	39.3	58.3	46.4	38.9	0.0	39.4
TEXAS P												
ESTIMATED POPULATION	9381	4007	7102	2781	7998	3143	7715	7338	6379	5028	47	7982
% STANDARD ERROR	A	B	A	A	A	B	A	A	A	B	D	A
ESTIMATED % OF STATE	59.7	25.5	45.2	17.7	50.9	20.0	49.1	46.7	40.6	32.0	0.3	50.8
UTAH												
ESTIMATED POPULATION	1081	297	595	136	691	270	677	760	558	466	0	730
% STANDARD ERROR	D	D	D	D	D	D	D	D	D	D	A	D
ESTIMATED % OF STATE	76.3	25.8	38.7	6.9	57.9	17.6	64.0	49.5	36.3	30.3	0.0	67.5
VERMONT												
ESTIMATED POPULATION	292	91	169	80	191	72	256	197	163	162	0	246
% STANDARD ERROR	D	D	D	D	D	D	D	D	D	D	A	D
ESTIMATED % OF STATE	65.9	20.6	38.1	18.1	43.2	16.3	57.7	44.3	36.7	32.0	0.0	55.4
VIRGINIA												
ESTIMATED POPULATION	1729	687	1479	562	1659	561	1112	1372	1394	911	1	1248
% STANDARD ERROR	C	D	D	D	C	D	C	D	D	D	D	C
ESTIMATED % OF STATE	62.0	24.6	53.0	20.1	59.5	20.1	39.9	49.2	50.0	32.7	0.6	44.6

P : PRELIMINARY RESULTS

*	STANDARD ERROR	CODE
*	GREATER THAN LESS THAN OR EQUAL TO	*
*	0 %	10 %
*	10 %	20 %
*	20 %	30 %
*	30 %	D

TABLE 2-13. GENERAL AVIATION AVIONICS EQUIPMENT BY STATE OF BASED AIRCRAFT - CY 1977
(8 of 17)

STATE	VHF COMMUNICATIONS					TRANSPONDER EQUIPMENT			IHS RECEIVING EQUIPMENT				
	360 CH	720 CH	26 STS	NO COMB	4096 CODE	ALT DEC	NO TRANS	LOC	MEAN BNC	GLIDE SLOPE	HLS	NO TLS	
WASHINGTON	4130	879	2144	1660	2279	353	4108	1615	1358	1277	6	4673	
ESTIMATED POPULATION		B	C	B	B	D	B	B	C	C	B	B	
% STANDARD ERROR	64.7	13.8	33.6	26.0	35.7	5.5	64.4	28.4	21.3	20.0	0.1	70.1	
ESTIMATED % OF STATE													
WEST VIRGINIA	616	351	617	142	713	372	395	665	597	539	0	431	
ESTIMATED POPULATION		D	D	D	D	D	D	D	D	D	A	D	
% STANDARD ERROR	56.3	32.1	56.4	13.0	65.1	34.0	36.1	60.7	58.5	49.2	0.0	39.3	
ESTIMATED % OF STATE													
WISCONSIN	1907	1399	1664	1103	2237	597	2044	1739	1935	755	0	2155	
ESTIMATED POPULATION		C	C	B	C	C	B	C	C	D	A	B	
% STANDARD ERROR	43.4	21.8	37.9	25.1	50.9	13.6	46.5	39.6	38.9	17.2	0.0	49.0	
ESTIMATED % OF STATE													
WYOMING	631	563	710	127	826	453	483	740	686	607	0	539	
ESTIMATED POPULATION		D	D	D	D	D	D	D	D	D	A	C	
% STANDARD ERROR	48.6	43.4	54.7	9.8	63.6	34.9	37.2	57.0	52.8	46.8	0.0	41.5	
ESTIMATED % OF STATE													
PUERTO RICO	341	110	260	24	287	114	178	279	235	229	0	163	
ESTIMATED POPULATION		D	D	D	D	D	D	D	D	D	A	D	
% STANDARD ERROR	73.6	23.9	56.1	5.3	62.0	24.6	38.4	60.3	50.8	49.5	0.0	39.8	
ESTIMATED % OF STATE													
OTHER U.S. TERRITORIES	120	24	71	4	78	15	68	70	56	39	0	73	
ESTIMATED POPULATION		D	D	D	D	D	D	D	D	D	A	D	
% STANDARD ERROR	76.1	15.5	45.3	2.6	49.7	9.6	43.5	44.6	35.4	25.1	0.0	46.7	
ESTIMATED % OF STATE													
FOREIGN	153	120	173	12	176	86	103	191	170	152	2	82	
ESTIMATED POPULATION		D	D	D	D	D	D	D	D	D	A	D	
% STANDARD ERROR	49.4	38.8	55.9	4.0	56.8	28.4	33.5	61.8	55.1	49.2	0.6	26.5	
ESTIMATED % OF STATE													

STANDARD ERROR	CODE
GREATER THAN OR EQUAL TO	LESS THAN
0 %	10 %
10 %	20 %
20 %	30 %
30 %	D

TABLE 2-13. GENERAL AVIATION AVIONICS EQUIPMENT BY STATE OF BASED AIRCRAFT - CY 1977
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STATE	VHF COMMUNICATIONS				TRANSPONDER EQUIPMENT				ILS RECEIVING EQUIPMENT			
	360 CH	720 CH	2+ SYS	NO COMM	4096 CODE	ALT ENC	NO TRANS	LOC	INNER BBC	GLIDE SLOPE	MLS	HO TLS
TOTAL ESTIMATED POPULATION	127019	54283	96125	37735	108169	42597	104805	99335	86372	68011	688	107909
% STANDARD ENCP ESTIMATED % OF POP	59.1	25.5	45.2	17.1	50.9	20.1	49.1	46.7	40.6	32.0	0.3	50.8

NOTE : COLUMN SUMMATIONS MAY DIFFER FROM PRINTED TOTALS DUE TO ESTIMATION PROCEDURES.

STANDARD ERROR	CODE	CODE
GREATER THAN	LESS THAN OR EQUAL TO	
0 %	10 %	A
10 %	20 %	B
20 %	30 %	C
30 %		D

TABLE 2-13. GENERAL AVIATION AVIONICS EQUIPMENT BY STATE OF BASED AIRCRAFT - CY 1977
(10 of 17)

STATE	NAVIGATION EQUIPMENT										
	NOA 100CH	NOA 200CH	2° ICVH	ADF	DME	IRNAV	LNAV	AUTOPIL	RADAR 1.2	STAN RADAR	NO NAVFO
ALABAMA											
ESTIMATED POPULATION	1140	1235	1516	1447	574	97	6	733	67	199	540
% STANDARD ERROR	D	D	D	D	C	D	D	D	D	D	C
ESTIMATED % OF STATE	41.1	48.5	54.7	52.2	20.7	3.5	0.2	26.4	2.4	7.2	19.5
ALASKA											
ESTIMATED POPULATION	3413	1249	905	2474	312	35	17	195	47	22	1362
% STANDARD ERROR	A	B	B	B	C	D	D	D	D	D	B
ESTIMATED % OF STATE	58.1	21.3	15.4	42.2	5.3	0.6	0.3	3.3	0.8	0.4	23.2
ARIZONA											
ESTIMATED POPULATION	1987	1752	2345	1805	864	327	67	1331	64	122	967
% STANDARD ERROR	C	C	C	C	C	D	D	D	D	D	C
ESTIMATED % OF STATE	43.4	36.3	51.2	39.4	18.9	7.2	1.5	29.1	1.4	2.7	21.1
ARKANSAS											
ESTIMATED POPULATION	1048	1099	1426	1286	994	258	18	925	208	289	696
% STANDARD ERROR	D	D	C	D	D	D	D	D	D	D	C
ESTIMATED % OF STATE	36.2	37.9	49.2	44.3	34.3	8.9	0.6	31.9	7.2	10.0	26.0
CALIFORNIA P											
ESTIMATED POPULATION	11287	10760	12646	12230	6073	1359	222	7488	1276	1581	6323
% STANDARD ERROR	A	A	A	B	B	C	C	B	C	C	B
ESTIMATED % OF STATE	40.7	38.8	45.6	44.1	21.9	4.9	0.8	27.0	4.6	5.7	22.8
COLORADO											
ESTIMATED POPULATION	1760	1368	1631	1629	791	172	30	1253	139	167	903
% STANDARD ERROR	C	C	B	B	C	D	D	C	D	D	C
ESTIMATED % OF STATE	45.2	35.0	41.9	41.8	20.3	4.4	0.8	32.2	3.6	3.8	23.2

P : PRELIMINARY RESULTS

STANDARD ERROR		CODE
GREATER THAN	LESS THAN OR EQUAL TO	
0 %	10 %	A
10 %	20 %	B
20 %	30 %	C
30 %	40 %	D

TABLE 2-13. GENERAL AVIATION AVIONICS EQUIPMENT BY STATE OF BASED AIRCRAFT - CY 1977
(11 of 17)

STATE	NAVIGATION EQUIPMENT									
	VOR 100CH	VOR 200CH	2° ACRV	ADF	DME	IRAV	AUTOPilot	RADAR ALT	URM ALIAS	NO MIMO
CONNECTICUT	620	728	785	717	316	38	68	377	122	144
ESTIMATED POPULATION	5	5	5	5	5	5	5	5	5	5
% STANDARD ERROR	36.2	42.3	45.8	41.8	18.3	2.0	5.2	22.0	7.1	8.4
ESTIMATED % OF STATE										17.7
DELAWARE	250	428	462	450	275	40	7	257	72	137
ESTIMATED POPULATION	5	5	5	5	5	5	5	5	5	5
% STANDARD ERROR	32.8	56.1	60.6	59.3	36.1	5.3	1.0	33.7	9.5	18.1
ESTIMATED % OF STATE										19.0
DC	0	141	141	99	25	64	133	87	89	18
ESTIMATED POPULATION	5	5	5	5	5	5	5	5	5	5
% STANDARD ERROR	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
ESTIMATED % OF STATE										10.9
FLORIDA	4204	4007	4710	4555	2262	506	83	2789	475	589
ESTIMATED POPULATION	5	5	5	5	5	5	5	5	5	5
% STANDARD ERROR	40.7	38.8	45.6	44.1	21.9	4.9	0.8	27.0	4.6	5.7
ESTIMATED % OF STATE										22.8
GEORGIA	1411	1741	1936	2145	837	162	9	999	123	216
ESTIMATED POPULATION	5	5	5	5	5	5	5	5	5	5
% STANDARD ERROR	33.5	41.3	46.0	50.9	19.9	4.3	0.2	23.7	2.9	5.1
ESTIMATED % OF STATE										24.5
ILLINOIS	222	268	225	229	57	1	2	44	1	1
ESTIMATED POPULATION	5	5	5	5	5	5	5	5	5	5
% STANDARD ERROR	35.0	43.2	36.4	36.9	9.2	0.3	0.3	7.2	0.3	0.3
ESTIMATED % OF STATE										21.2
INDIANA	1153	785	949	1043	255	47	4	538	72	28
ESTIMATED POPULATION	5	5	5	5	5	5	5	5	5	5
% STANDARD ERROR	46.7	33.1	40.1	44.0	10.8	2.0	0.2	22.7	3.0	1.2
ESTIMATED % OF STATE										19.4

P : PRELIMINARY RESULTS

STANDARD ERROR	CODES
GREATER THAN	-----
LESS THAN OR EQUAL TO	-----
0 %	10 %
10 %	20 %
20 %	30 %
30 %	D

NOTE: 1. THE ESTIMATED % OF STATE IS THE ESTIMATED % OF THE TOTAL NUMBER OF AIRPORTS IN THE STATE.

2. THE ESTIMATED % OF STATE IS THE ESTIMATED % OF THE TOTAL NUMBER OF AIRPORTS IN THE STATE.

3. THE ESTIMATED % OF STATE IS THE ESTIMATED % OF THE TOTAL NUMBER OF AIRPORTS IN THE STATE.

TABLE 2-13. GENERAL AVIATION AVIONICS EQUIPMENT BY STATE OF BASED AIRCRAFT - CY 1977
(12 of 17)

STATE	NAVIGATION EQUIPMENT										
	VOR 100CH	VOR 200CH	2+ ICVR	ADF	DME	MEAT	LNAV	AUTOPL	RADAR ALF	STAN HHR	NO WAVES
ILLINOIS P											
ESTIMATED POPULATION	3217	3067	3604	3486	1731	387	63	2134	364	451	1802
S STANDARD ERROR	B	B	B	B	D	D	B	D	C	C	B
ESTIMATED % OF STATE	40.7	38.8	45.6	44.1	21.9	4.9	0.8	27.0	4.6	5.7	22.8
INDIANA P											
ESTIMATED POPULATION	1766	1693	1978	1913	950	213	35	1171	200	247	989
S STANDARD ERROR	C	C	C	C	C	D	D	D	D	D	C
ESTIMATED % OF STATE	40.7	38.8	45.6	44.1	21.9	4.9	0.8	27.0	4.6	5.7	22.8
IOWA											
ESTIMATED POPULATION	1508	1573	1537	1597	779	116	41	1168	135	127	929
S STANDARD ERROR	C	D	C	C	C	D	D	D	D	D	C
ESTIMATED % OF STATE	39.3	40.6	39.7	41.2	20.1	3.0	1.1	30.2	3.5	3.3	24.0
KANSAS											
ESTIMATED POPULATION	1502	2087	2528	1789	1375	141	0	1555	251	286	950
S STANDARD ERROR	C	C	C	C	C	D	D	C	D	D	C
ESTIMATED % OF STATE	32.2	46.8	56.3	38.4	29.5	3.0	0.0	33.4	5.4	6.1	20.4
KENTUCKY											
ESTIMATED POPULATION	832	414	821	736	416	140	1	481	115	181	304
S STANDARD ERROR	D	D	D	D	D	D	D	D	D	D	D
ESTIMATED % OF STATE	54.6	27.0	53.5	47.9	27.1	9.1	0.1	31.4	7.5	11.8	19.8
LOUISIANA											
ESTIMATED POPULATION	870	1522	1583	2085	1067	144	66	1145	132	533	975
S STANDARD ERROR	C	C	C	B	C	D	D	C	D	C	C
ESTIMATED % OF STATE	23.4	41.0	42.6	56.1	28.7	3.9	1.8	30.8	3.6	14.3	26.2
MAINE											
ESTIMATED POPULATION	516	336	382	380	117	16	7	135	19	21	405
S STANDARD ERROR	D	D	D	D	D	D	D	D	D	D	D
ESTIMATED % OF STATE	42.4	27.7	28.1	28.0	9.7	1.4	0.6	11.2	1.6	1.7	33.2

P : PRELIMINARY RESULTS

	STANDARD ERROR		CODE	
	GREATER THAN	LESS THAN OR EQUAL TO	10%	10%
10%	10%	10%	10%	10%
20%	20%	20%	20%	20%
30%	30%	30%	30%	30%

REVIEWED BY [Signature] DATE [Signature]

TABLE 2-13. GENERAL AVIATION AVIONICS EQUIPMENT BY STATE OF BASED AIRCRAFT - CY 1977
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STATE	NAVIGATION EQUIPMENT										
	VOR 100CH	VOR 200CH	2+ BCVR	ADF	DME	MMAN	LMMAN	AUTOPLT	RADAR 112	STMR RADAR	NO RADAR
MARYLAND											
ESTIMATED POPULATION	1275	1183	1507	1236	540	43	11	830	66	88	416
% STANDARD ERROR	D	D	C	D	D	D	D	D	D	D	D
ESTIMATED % OF STATE	49.4	41.6	53.0	43.6	19.0	1.5	0.4	29.2	2.3	3.1	14.6
MASSACHUSETTS											
ESTIMATED POPULATION	1222	1250	1439	1257	575	117	88	664	71	80	483
% STANDARD ERROR	D	D	C	D	D	D	D	D	D	D	C
ESTIMATED % OF STATE	43.5	46.4	51.1	46.7	20.5	4.2	1.6	23.6	2.6	2.9	17.2
MICHIGAN											
ESTIMATED POPULATION	2097	3362	2865	3782	1084	163	2	1734	248	239	2338
% STANDARD ERROR	B	C	B	C	C	D	D	C	D	D	C
ESTIMATED % OF STATE	27.3	43.8	37.3	49.2	14.1	2.1	0.0	22.6	3.2	3.1	30.4
MINNESOTA											
ESTIMATED POPULATION	1932	1910	2120	2115	976	58	21	1019	59	105	1259
% STANDARD ERROR	C	C	C	C	D	D	D	D	D	D	D
ESTIMATED % OF STATE	37.6	37.2	41.3	41.2	19.0	1.1	0.4	19.9	1.2	2.1	24.4
MISSISSIPPI											
ESTIMATED POPULATION	719	684	868	782	451	68	1	910	99	118	788
% STANDARD ERROR	D	D	D	D	D	D	D	D	D	D	C
ESTIMATED % OF STATE	32.4	30.9	39.2	35.3	20.3	3.4	0.1	18.5	2.2	5.3	35.4
MISSOURI											
ESTIMATED POPULATION	2017	1707	1998	1710	832	206	19	1236	136	210	1859
% STANDARD ERROR	C	C	C	C	C	D	D	C	D	D	C
ESTIMATED % OF STATE	46.1	37.3	93.7	37.5	18.2	4.5	0.4	27.0	3.0	4.0	23.2
ONTARIO											
ESTIMATED POPULATION	1205	655	938	992	388	26	6	531	68	35	688
% STANDARD ERROR	C	D	C	C	D	D	D	D	D	D	C
ESTIMATED % OF STATE	49.6	27.0	38.6	40.9	16.0	1.0	0.3	21.9	2.7	2.3	28.3

TABLE 2-13. GENERAL AVIATION AVIONICS EQUIPMENT BY STATE OF BASED AIRCRAFT - CY 1977
(14 of 17)

STATE	NAVIGATION EQUIPMENT										
	VOR 100CH	VOR 200CH	2+ RCVR	ADF	DME	IRU	LORAN	AUTOPLT	RADAR ALT	WTMR RADAR	NO RAVEQ
NEBRASKA											
ESTIMATED POPULATION	897	1103	1193	1095	549	225	21	94	163	144	660
% STANDARD ERROR	D	C	C	C	D	D	D	D	D	D	C
ESTIMATED % OF STATE	33.8	41.5	44.9	41.3	26.7	8.5	0.8	35.6	5.4	5.4	24.9
NEVADA											
ESTIMATED POPULATION	684	790	839	905	358	93	29	457	109	91	246
% STANDARD ERROR	D	D	D	D	D	D	D	D	D	D	D
ESTIMATED % OF STATE	39.5	45.6	48.4	52.3	20.7	5.4	1.7	26.4	6.3	5.3	14.2
NEW HAMPSHIRE											
ESTIMATED POPULATION	679	942	1140	1450	499	534	250	33	6	258	32
% STANDARD ERROR	D	D	D	D	D	D	D	D	D	D	C
ESTIMATED % OF STATE	37.6	38.3	42.5	45.5	21.3	2.9	0.5	22.0	2.1	2.0	24.5
NEW JERSEY											
ESTIMATED POPULATION	2426	3180	3850	4638	2262	1486	193	202	1670	503	327
% STANDARD ERROR	C	C	C	C	C	D	D	D	D	C	C
ESTIMATED % OF STATE	53.6	60.9	58.3	50.3	32.9	4.3	5.4	36.9	11.1	6.4	11.7
NEW MEXICO											
ESTIMATED POPULATION	733	896	1097	894	571	64	0	6	632	68	76
% STANDARD ERROR	D	D	C	C	D	D	D	D	D	D	C
ESTIMATED % OF STATE	38.0	46.4	56.8	46.3	29.5	4.4	0.6	32.7	3.5	4.0	19.3
NEW YORK P											
ESTIMATED POPULATION	2643	2520	2962	2864	1422	318	52	1754	299	370	1481
% STANDARD ERROR	B	B	B	B	C	D	D	D	D	D	B
ESTIMATED % OF STATE	40.7	38.8	45.6	44.1	21.9	4.3	0.8	27.0	4.6	5.7	22.8
NORTH CAROLINA											
ESTIMATED POPULATION	1772	1732	2021	2146	1049	263	0	14	1219	275	380
% STANDARD ERROR	D	C	C	C	C	D	D	D	D	D	C
ESTIMATED % OF STATE	41.8	40.9	47.7	50.7	24.8	6.2	0.3	28.8	6.5	9.0	17.1
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P : PRELIMINARY RESULTS											
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STANDARD ERROR											
CREATOR											
LESS THAN OR EQUAL TO											
0.5											
10 X											
10 S											
20 X											
20 S											
30 X											
30 S											
EXTERIOR SURFACE											
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TABLE 2-13. GENERAL AVIATION AVIONICS EQUIPMENT BY STATE OF BASED AIRCRAFT - CY 1977
(15 of 17)

STATE	VOR 100CH	VOR 200CH	NAVIGATION EQUIPMENT						NO RADAR
			2+ RCVR	ADF	DME	IRAV	LRNAV	AUTOPLT	
NORTH DAKOTA									
ESTIMATED POPULATION	548	503	633	494	206	32	0	305	22
X STANDARD ERROR		D	D	D	D	1	D	D	581
ESTIMATED % OF STATE	32.8	30.2	37.9	29.6	14.7	1.9	0.0	18.3	1.5
ONIC									32.4
ESTIMATED POPULATION	3606	3156	4165	2993	1681	428	43	2179	497
X STANDARD ERROR		B	B	B	C	D	D	B	1656
ESTIMATED % OF STATE	43.6	38.2	50.4	36.2	19.9	5.2	0.5	26.4	6.0
OKLAHOMA									20.0
ESTIMATED POPULATION	1876	1587	2229	2022	1292	246	58	1566	379
X STANDARD ERROR		C	C	C	B	D	D	C	338
ESTIMATED % OF STATE	44.3	34.9	49.0	44.5	28.4	5.4	1.3	34.4	8.3
OREGON									28.3
ESTIMATED POPULATION	1828	2083	1517	1890	1135	225	17	1028	171
X STANDARD ERROR		C	B	C	C	D	D	C	222
ESTIMATED % OF STATE	35.4	40.4	29.4	36.6	22.0	4.8	0.3	19.9	3.3
PENNSYLVANIA									27.7
ESTIMATED POPULATION	2907	1991	2471	2053	1483	516	55	1235	587
X STANDARD ERROR		C	B	C	C	D	D	C	301
ESTIMATED % OF STATE	46.2	31.7	39.3	32.7	23.6	8.2	0.9	19.7	9.4
RHODE ISLAND									22.7
ESTIMATED POPULATION	155	116	147	137	66	11	12	68	14
X STANDARD ERROR		D	D	D	D	D	D	D	7
ESTIMATED % OF STATE	45.9	34.3	43.5	40.5	19.7	3.8	3.8	20.3	4.4
SOUTH CAROLINA									19.0
ESTIMATED POPULATION	899	437	787	799	417	119	6	436	68
X STANDARD ERROR		D	D	D	D	D	D	D	140
ESTIMATED % OF STATE	51.6	25.1	45.2	45.9	24.0	6.9	0.4	25.1	3.9
STANDARD ERROR CODE									
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TABLE 2-13. GENERAL AVIATION AVIONICS EQUIPMENT BY STATE OF BASED AIRCRAFT - CY 1977
 (16 of 17)

STATE	NAVIGATION EQUIPMENT										
	TOP 100CH	TOP 200CH	2° ACV	ADF	DME	RADAR	LORAN	AUTOPilot	MAGNETIC ALIT.	DECK RADAR	NO. WAVES
SOUTH DAKOTA											
ESTIMATED POPULATION	544	439	520	532	207	23	0	269	75	11	923
% STANDARD ERROR	D	D	D	D	D	D	D	D	D	D	29.6
ESTIMATED % OF STATE	36.1	30.8	36.4	37.2	16.5	1.7	0.6	16.8	5.3	0.8	
MISSISSIPPI											
ESTIMATED POPULATION	845	1323	1522	1385	697	226	5	1023	223	216	794
% STANDARD ERROR	D	D	C	C	C	D	D	C	D	D	
ESTIMATED % OF STATE	28.4	46.5	51.2	45.3	29.9	7.6	0.2	36.4	7.5	10.6	26.7
TEXAS P											
ESTIMATED POPULATION	6395	6097	7165	6929	3441	770	126	4243	723	896	3583
% STANDARD ERROR	B	B	A	A	B	C	B	B	B	B	
ESTIMATED % OF STATE	40.7	38.8	45.6	44.1	21.9	4.9	0.8	27.0	4.6	5.7	22.8
UTAH											
ESTIMATED POPULATION	742	680	601	487	275	97	0	373	71	41	212
% STANDARD ERROR	D	D	D	D	D	D	D	D	D	D	
ESTIMATED % OF STATE	48.3	46.2	39.1	31.7	17.9	6.6	0.6	26.3	6.7	20.7	13.8
VERMONT											
ESTIMATED POPULATION	197	147	171	182	86	9	3	97	17	18	110
% STANDARD ERROR	D	D	D	D	D	D	D	D	D	D	
ESTIMATED % OF STATE	46.5	33.3	36.6	31.1	19.5	2.1	0.7	22.0	3.9	6.2	26.9
WEST VIRGINIA											
ESTIMATED POPULATION	1223	1077	1467	1147	406	111	0	657	127	171	679
% STANDARD ERROR	D	D	D	D	D	D	D	D	D	D	
ESTIMATED % OF STATE	43.7	38.6	52.6	41.1	16.5	4.6	0.2	23.6	4.6	6.1	26.4
WASHINGTON											
ESTIMATED POPULATION	2526	1734	2180	2064	646	58	9	829	169	85	2126
% STANDARD ERROR	B	C	C	C	D	D	D	C	D	D	
ESTIMATED % OF STATE	39.6	27.2	34.2	32.3	10.2	10.2	0.9	13.0	0.9	0.7	33.3

Preliminary Results

STANDARD ERROR		CODE
GREATER THAN	LESS THAN OR EQUAL TO	
0 X	10 X	A
10 X	20 X	B
20 X	30 X	C
30 X		D

TABLE 2-13. GENERAL AVIATION AVIONICS EQUIPMENT BY STATE OF BASED AIRCRAFT - CY 1977
(17 of 17)

STATE	NAVIGATION EQUIPMENT										
	VOT 100CH	VOT 200CH	2+ ACVR	ADF	DME	RNAV	LNAV	AUTOPLT	RADAR ALT	WTW RADAR	NO HAWK
WEST VIRGINIA											
ESTIMATED POPULATION	480	507	678	639	487	160	1	405	110	155	152
% STANDARD ERROR	D	D	D	D	D	D	D	D	D	D	D
ESTIMATED % OF STATE	43.9	46.4	61.9	58.4	44.5	14.7	0.1	37.0	10.1	14.2	13.9
WISCONSIN											
ESTIMATED POPULATION	1798	1860	1789	2059	590	62	12	827	116	207	1190
% STANDARD ERROR	C	C	C	C	C	D	D	C	D	D	B
ESTIMATED % OF STATE	40.9	33.2	38.9	46.9	13.4	1.8	0.3	16.8	2.7	8.7	27.1
WICHING											
ESTIMATED POPULATION	669	886	764	726	259	273	12	501	15	28	169
% STANDARD ERROR	D	D	D	D	D	D	D	D	D	D	B
ESTIMATED % OF STATE	51.6	37.4	58.8	-	55.3	19.3	21.0	6.3	38.6	1.2	13.0
PUERTO RICO											
ESTIMATED POPULATION	279	180	279	341	124	6	0	155	3	6	49
% STANDARD ERROR	D	D	D	D	D	D	D	D	D	D	D
ESTIMATED % OF STATE	60.1	30.3	60.1	73.5	26.9	1.4	0.0	33.5	0.7	1.4	10.6
OTHER U.S. TERRITORIES											
ESTIMATED POPULATION	98	48	70	95	16	0	0	31	1	6	7
% STANDARD ERROR	D	D	D	D	D	A	A	D	D	D	D
ESTIMATED % OF STATE	59.6	30.4	44.4	60.5	10.2	0.0	0.0	19.9	0.3	4.3	4.7
FOREIGN											
ESTIMATED POPULATION	97	148	176	204	82	8	0	105	6	23	34
% STANDARD ERROR	D	D	D	D	D	D	D	D	D	D	D
ESTIMATED % OF STATE	31.5	47.8	57.0	66.0	26.6	2.6	0.0	33.9	1.9	7.6	11.0
TOTAL											
ESTIMATED POPULATION	86556	82459	97024	93782	46597	10424	1805	57434	9878	12054	48376
% STANDARD ERROR	A	A	A	A	A	A	B	A	A	A	A
ESTIMATED % OF POP	40.7	38.8	45.6	44.1	21.9	4.9	0.8	27.0	4.6	5.7	22.8

NOTE : COLUMN SUMMATIONS MAY DIFFER FROM PRINTED TOTALS DUE TO ESTIMATION PROCEDURES.

STANDARD ERROR	CODE
GREATER THAN	-----
LESS THAN OR EQUAL TO	-----
0%	-----
10%	-----
20%	-----
30%	-----

100% APPROXIMATE

100% APPROXIMATE

100% APPROXIMATE

100% APPROXIMATE

100% APPROXIMATE

TABLE 2-14. GENERAL AVIATION AVIONICS EQUIPMENT BY REGION OF BASED AIRCRAFT - CY 1977
(1 of 6)

P : PRELIMINARY RESULTS

TABLE 2-14. GENERAL AVIATION AVIONICS EQUIPMENT BY REGION OF BASED AIRCRAFT - CY 1977
(2 of 6)

REGION	VHF COMMUNICATIONS				TRANSPONDER EQUIPMENT				ILS RECEIVING EQUIPMENT			
	369 CH	720 CH	2+ SYS	NO COMM	4096 CODE	ALT ENC	NO TRANS	LOC	MARKER BEC	GLIDE SLOPE	MLS	NO ILS
NEW ENGLAND ESTIMATED POPULATION % STANDARD ERROR ESTIMATED % OF REGION	4622 B	2104 C	3223 B	1288 B	3623 C	1550 B	4007 B	3931 B	3144 B	2302 B	30	3576 B
	60.0	27.3	41.8	16.7	47.0	20.1	52.0	51.0	40.8	29.9	0.4	46.4
NORTHWESTERN ESTIMATED POPULATION % STANDARD ERROR ESTIMATED % OF REGION	8614 A	2962 A	4864 B	3045 B	6497 B	1869 C	7510 A	4762 B	4057 B	2973 B	6	8848 A
	61.8	21.3	34.9	21.9	56.6	13.4	53.9	34.2	29.1	21.3	0.0	63.5
PACIFIC ESTIMATED POPULATION % STANDARD ERROR ESTIMATED % OF REGION	403 D	193 D	338 D	81 D	308 D	21 D	280 D	344 D	317 D	285 D	0	309 D
	60.5	29.0	50.9	12.3	58.4	3.2	42.2	51.8	47.6	42.9	0.0	46.4
ROCKY MOUNTAIN ESTIMATED POPULATION % STANDARD ERROR ESTIMATED % OF REGION	7127 B	3107 B	4934 B	2345 B	5907 B	2058 B	6443 B	5204 B	4347 B	3617 B	13	6907 B
	58.1	25.3	40.2	19.1	48.2	16.8	52.6	42.4	35.5	29.5	0.1	56.3
SOUTHERN P ESTIMATED POPULATION % STANDARD ERROR ESTIMATED % OF REGION	17768 A	8074 B	13858 A	5592 A	16822 A	6266 A	13591 A	15027 A	12956 A	10125 A	96	14790 A
	57.9	26.3	45.1	18.2	54.8	20.4	44.3	48.9	42.2	33.0	0.3	46.2
SOUTHWESTERN P ESTIMATED POPULATION % STANDARD ERROR ESTIMATED % OF REGION	16718 A	7409 B	13480 A	5525 A	14761 A	5951 A	13841 A	13552 A	12148 A	9569 A	79	14047 A
	58.0	25.7	46.8	19.2	51.2	20.7	48.0	47.0	42.2	33.2	0.3	48.
* : PRELIMINARY RESULTS												
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TABLE 2-14. GENERAL AVIATION AVIONICS EQUIPMENT BY REGION OF BASED AIRCRAFT - CY 1977
(3 of 6)

REGION	VHF COMMUNICATIONS				TRANSPONDER EQUIPMENT				ILS RECEIVING EQUIPMENT			
	360 CH	720 CH	2+ SYS	NO CONN	4096 CODE	ALT 2NC	NO TRANS	LOC	MICRO REC	GLIDE SLOPE	HLS	NO ILS
WISCONSIN												
ESTIMATED POPULATION	20716	8622	15872	5857	17499	6435	16569	16125	13984	11149	83	16968
% STANDARD BLACK	A	B	A	A	A	A	A	A	A	B	D	A
ESTIMATED % OF REGION	60.9	25.3	46.6	17.2	51.3	18.9	48.7	47.4	41.1	32.8	0.2	49.8
TOTAL	127019	54283	96125	37735	108189	42597	104405	99335	86372	68011	688	107909
% STANDARD ERROR	A	A	A	A	A	A	A	A	A	A	D	A
ESTIMATED % OF POP	59.7	25.5	45.2	17.7	50.9	20.0	49.1	46.7	40.6	32.0	0.3	50.8

NOTE : COLUMN SUMMATIONS MAY EXCEED FFCH PRINTED TOTALS DUE TO ESTIMATION PROCEDURES.

P : PRELIMINARY RESULTS

STANDARD ERROR		CODE	
GREATER THAN OR EQUAL TO		CODE	
0 X		10 X	
10 X		20 X	
20 X		30 X	
30 X		D	

TABLE 2-14. GENERAL AVIATION AVIONICS EQUIPMENT BY REGION OF BASED AIRCRAFT - CY 1977
(4 of 6)

REGION	VOR 100CH	VOR 200CH	2+ RCVR	NAVIGATION EQUIPMENT						RADAR ALT	WTHR RADAR	NO WAVEQ
				ADF	DME	IRAV	LNAV	AUTOPLT				
ALASKA												
ESTIMATED POPULATION	3613	1249	905	2474	312	35	17	195	47	22	1362	
% STANDARD ERROR	A	B	C	D	E	F	G	H	I	J	K	
ESTIMATED % OF REGION	56.1	21.3	15.4	42.2	5.3	0.6	0.3	3.3	0.8	0.4	23.2	
CENTRAL												
ESTIMATED POPULATION	5525	6471	7257	6201	3537	689	82	4903	666	775	3599	
% STANDARD ERROR	B	B	B	B	B	C	D	B	D	D	B	
ESTIMATED % OF REGION	37.6	41.1	46.0	39.3	22.4	4.4	0.5	31.1	4.2	4.9	22.6	
EASTERN P												
ESTIMATED POPULATION	11305	9720	12350	10818	6201	1409	439	6964	1855	1605	4849	
% STANDARD ERROR	B	B	A	B	B	C	C	B	B	D	A	
ESTIMATED % OF REGION	45.3	38.9	49.4	43.3	24.8	5.6	1.8	27.9	7.4	6.4	19.4	
EUROPEAN												
ESTIMATED POPULATION	21	90	91	103	42	4	0	59	4	14	21	
% STANDARD ERROR	D	D	D	D	D	D	D	D	D	D	D	
ESTIMATED % OF REGION	13.8	56.8	57.9	65.0	27.0	2.5	0.0	37.2	2.6	9.0	13.8	
GREAT LAKES P												
ESTIMATED POPULATION	14417	14641	16444	16352	6976	1314	179	9067	1196	1749	9228	
% STANDARD ERROR	A	A	A	A	A	C	D	A	B	B	A	
ESTIMATED % OF REGION	38.2	38.8	43.8	43.4	18.5	3.5	0.5	24.0	3.2	4.6	24.5	
NEW ENGLAND												
ESTIMATED POPULATION	3155	3024	3384	3168	1611	223	162	1600	270	305	1655	
% STANDARD ERROR	B	C	B	B	C	D	D	C	D	D	B	
ESTIMATED % OF REGION	41.0	39.3	43.9	41.1	18.3	2.9	2.1	20.8	3.5	4.0	21.5	
P : PRELIMINARY RESULTS												
STANDARD ERROR												
CODE												
GREATER THAN OR EQUAL TO												
LESS THAN												
0 %												
10 %												
20 %												
30 %												

P : PRELIMINARY RESULTS

2-81
FEDERAL AVIATION AVIONICS SURVEY BY REGION CY 1977

TABLE 2-14. GENERAL AVIATION AVIONICS EQUIPMENT BY REGION OF BASED AIRCRAFT - CY 1977
 (5 of 6)

REGION	NAVIGATION EQUIPMENT										RADAR ALT	UTM RADAR	NO NAVS																																																																																																																				
	VOR 100CH	VOR 200CH	2+ RCVR	ADF	DME	RNAV	LNAV	AUTOPilot	RADAR ALT																																																																																																																								
NORTHWESTERN ESTIMATED POPULATION ± STANDARD ERROR ESTIMATED % OF REGION	5512	4607	4651	5001	2041	331	31	2398	413	295	4022	1	1																																																																																																																				
	39.6	33.1	33.4	35.9	14.7	2.4	0.2	17.2	8	0	0	2.1	26.9																																																																																																																				
	D	D	D	D	D	D	D	D	D	D	D	D	D																																																																																																																				
PACIFIC ESTIMATED POPULATION ± STANDARD ERROR ESTIMATED % OF REGION	247	279	248	267	70	1	2	60	1	6	137	1	20.7																																																																																																																				
	37.2	41.9	37.3	40.2	10.5	0.3	0.3	9.1	0.3	1.0	1.0	1.0	1.0																																																																																																																				
	D	D	D	D	D	D	D	D	D	D	D	D	D																																																																																																																				
ROCKY MOUNTAIN ESTIMATED POPULATION ± STANDARD ERROR ESTIMATED % OF REGION	5470	4130	5089	4363	2167	624	49	3233	389	308	2938	1	1																																																																																																																				
	44.6	33.7	41.5	39.7	17.7	5.1	0.4	26.4	3.2	2.5	24.0	1	1																																																																																																																				
	D	D	D	D	D	D	D	D	D	D	D	D	D																																																																																																																				
SOUTHERN P ESTIMATED POPULATION ± STANDARD ERROR ESTIMATED % OF REGION	12248	11789	14573	14436	7062	1614	128	8288	1404	21668	7110	1	1																																																																																																																				
	39.9	38.4	47.4	47.0	23.0	5.3	0.4	27.0	1	B	B	1	1																																																																																																																				
	A	A	A	A	A	A	C	A	A	B	B	A	A																																																																																																																				
SOUTHWESTERN P ESTIMATED POPULATION ± STANDARD ERROR ESTIMATED % OF REGION	10927	11206	13503	13220	7368	1504	278	8515	1511	2134	6733	1	1																																																																																																																				
	37.9	38.9	46.9	45.9	25.6	5.2	1.0	29.6	5.2	7.4	23.4	1	1																																																																																																																				
	A	A	A	A	A	A	B	A	B	C	B	A	A																																																																																																																				
WESTERN P ESTIMATED POPULATION ± STANDARD ERROR ESTIMATED % OF REGION	13959	13304	15831	14941	7296	1781	319	9277	1450	1795	7537	1	1																																																																																																																				
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P : PRELIMINARY RESULTS

TABLE 2-14. GENERAL AVIATION AVIONICS EQUIPMENT BY REGION OF BASED AIRCRAFT - CY 1977
(6 of 6)

TABLE 2-15. GENERAL AVIATION AVIONICS EQUIPMENT BY PRIMARY USE - CY 1977 (1 of 4)

	VHF COMMUNICATIONS			TRANSPONDER EQUIPMENT			ILS RECEIVING EQUIPMENT					
	360 CH	720 CH	2+ STS	NO COMM	4096 CODE	ALT ENC	NO TRANS	LOC	AKER SEC	GLIDE SLOPE	MIS	NO TTS
EXECUTIVE												
ESTIMATED POPULATION	3204	6103	7949	41	8558	7728	366	8391	8197	6064	32	527
% STANDARD ERROR	B	A	D	0	A	A	D	A	A	A	D	C
ESTIMATED % OF USE	36.5	69.5	90.5	0.5	97.4	88.0	4.2	95.6	93.3	91.6	0.4	6.0
BUSINESS												
ESTIMATED POPULATION	26043	16851	30446	1112	34576	16355	7235	29950	28318	23674	183	19826
% STANDARD ERROR	A	A	A	B	A	A	B	A	A	A	D	B
ESTIMATED % OF USE	62.9	40.7	73.6	2.7	83.5	39.5	17.5	72.4	68.4	56.7	0.4	26.6
PERSONAL												
ESTIMATED POPULATION	65413	14743	37634	12806	38129	9823	52221	35668	30358	19666	428	51330
% STANDARD ERROR	A	A	A	A	A	A	B	A	A	A	D	A
ESTIMATED % OF USE	78.1	16.7	42.9	14.5	43.2	11.1	59.1	40.4	34.4	22.0	0.5	58.1
AERIAL APPLICATION												
ESTIMATED POPULATION	1535	283	423	5805	4118	67	7187	397	474	141	0	6956
% STANDARD ERROR	B	D	C	A	C	D	A	C	D	D	A	A
ESTIMATED % OF USE	20.8	3.8	5.7	78.5	5.7	1.2	97.2	5.4	6.4	1.9	0.0	98.1
INSTRUMENTATIONAL												
ESTIMATED POPULATION	10881	5209	5563	578	8477	1728	7663	7958	5455	5160	5	7920
% STANDARD ERROR	B	C	B	B	B	C	B	B	B	B	D	B
ESTIMATED % OF USE	67.6	32.4	34.6	3.6	52.7	10.7	47.6	49.4	33.9	31.9	0.0	99.2

	STANDARD ERROR				CODE				TEST			
	GREATER THAN		LESS THAN OR EQUAL TO		A		B		C		D	
	0%		10%		A		B		C		D	
	10%		20%		A		B		C		D	
	20%		30%		A		B		C		D	
	30%				A		B		C		D	

CONFIDENCE LEVEL
AND STANDARD DEVIATION
TEST

TYPE III TESTS VALIDATE ESTIMATE AT 95% LEVEL OF CONFIDENCE - CA 1974

TABLE 2-15. GENERAL AVIATION AVIONICS EQUIPMENT BY PRIMARY USE - CY 1977 (2 OF 4)

ESTIMATION PROCEDURES. **NOTE:** COLUMN SUMMATIONS MAY DIFFER FROM PRINTED TOTALS DUE TO ESTIMATION PROCEDURES.

TABLE 2-15. GENERAL AVIATION AVIONICS EQUIPMENT BY PRIMARY USE - CY 1977 (3 OF 4)

TABLE 2-15. GENERAL AVIATION AVIONICS EQUIPMENT BY PRIMARY USE - CY 1977 (4 OF 4)

NAVIGATION EQUIPMENT										
	VOR 100CN	VOR 200CN	2+ RCVR	ADF	DME	IRAV	AUTOPILOT	RADAR ALT	OTHER RADAR	NO RADAR
INDUSTRIAL/SPECIAL										
ESTIMATED POPULATION	640	459	438	568	259	0	32	218	31	48
% STANDARD ERROR	C	D	D	C	D	A	D	D	D	C
ESTIMATED % OF USE	47.7	36.2	32.6	42.4	19.3	0.0	2.4	16.3	2.3	3.6
RENTAL										
ESTIMATED POPULATION	2132	6157	4988	4897	2052	319	41	3669	215	211
% STANDARD ERROR	C	B	B	B	C	D	C	D	C	B
ESTIMATED % OF USE	24.7	71.4	57.9	56.8	23.8	3.7	0.5	42.6	2.5	2.5
GENERAL										
ESTIMATED POPULATION	860	2029	1554	1745	1052	240	109	992	281	352
% STANDARD ERROR	C	C	B	B	B	D	D	B	C	B
ESTIMATED % OF USE	17.9	42.3	32.4	36.4	21.9	5.0	2.3	20.7	5.9	7.3
INACTIVE										
ESTIMATED POPULATION	5817	2147	2046	2124	676	131	33	758	119	174
% STANDARD ERROR	B	B	C	B	C	D	D	C	B	B
ESTIMATED % OF USE	20.0	7.4	7.0	7.3	2.3	0.5	0.1	2.6	0.4	0.6
TOTAL										
ESTIMATED POPULATION	66556	62459	97024	93782	46597	10424	1805	57634	9878	12054
% STANDARD ERROR	A	A	A	A	A	A	A	A	A	A
ESTIMATED % OF POP	40.7	38.8	45.6	44.1	21.9	4.9	0.8	27.0	4.6	5.7

NOTE : COLUMN SUMMATIONS MAY DIFFER FROM PRINTED TOTALS DUE TO ESTIMATION PROCEDURES.

STANDARD ERROR		CODE	
GREATER THAN		LESS THAN OR EQUAL TO	
0 %	10 %	10 %	A
10 %	20 %	20 %	B
20 %	30 %	30 %	C
30 %	40 %	40 %	D

TABLE 2-16. GENERAL AVIATION AIRFRAME HOURS BY AIRCRAFT MANUFACTURER AND MODEL - CY 1977
(1 of 11)

MANUFACTURER / MODEL	HOURS ESTIMATE [IN THOUSANDS]	STANDARD ERROR [IN THOUSANDS]	PERCENT STANDARD ERROR	
			1976	1977
OCHEP 1	8637.1	1984.8	23.0	
OCHEP 2	1584.5	166.6	11.7	
OCHEP 3	645.7	46.5	5.3	
OCHEP 4	1238.2	80.1	6.5	
OCHEP 5	1279.1	280.4	21.9	
OCHEP 6	1108.6	272.3	24.6	
OCHEP 7	1300.1	293.7	23.5	
OCHEP 8	251.6	46.2	18.1	
C2NEP 9	537.9	209.7	39.0	
C2NEP 10	784.0	174.3	22.2	
C2NEP 11	1637.0	303.2	16.5	
C2NEP 12	461.3	63.6	14.4	
C2NEP 13	437.4	80.6	18.4	
AEROSFSM 16	54.6	9.2	16.9	
AEROSFSM 41	37.9	10.4	27.5	
AIRFMSA	594.3	62.1	10.5	
AIRSPC18	7.5	0.7	9.0	
AIRCAT300	42.9	8.3	19.4	
AMO FALC10	105.6	20.5	19.4	
BBB PLIC20	1028.1	109.0	10.6	
ARCTICSA	326.4	32.4	9.9	
APC/IC3181	15.1	1.7	11.5	
AROMCA15	368.3	16.5	4.5	
AROMCP8	303.9	40.8	13.4	
AROMCA65	362.0	28.9	8.0	
AROMCAC3	118.4	36.0	20.8	

NOTE: See following page for coding.

NOTE: Other XX refers to all general aviation aircraft belonging to manufacturer/model groups of fewer than 20 aircraft in size for aircraft XX where XX stands for

- 01 Fixed wing piston, 1 engine, 1-3 seats.
- 02 Fixed wing piston, 1 engine, 4+ seats.
- 03 Fixed wing piston, 2 engines, 1-6 seats.
- 04 Fixed wing piston, 2 engines, 7+ seats.
- 05 Fixed wing piston, other.
- 06 Fixed wing turboprop, 2 engines, 1-12 seats.
- 07 Fixed wing turboprop, 2 engines, 13+ seats.
- 08 Fixed wing turboprop, other.
- 09 Fixed wing turbojet, 2 engines.
- 10 Fixed wing turbojet, other.
- 11 Rotorcraft, piston.
- 12 Rotorcraft, turbine.
- 13 Other aircraft.

TABLE 2-16. GENERAL AVIATION AIRFRAME HOURS BY AIRCRAFT MANUFACTURER AND MODEL - CY 1977
 (2 of 11)

MANUFACTURER / MODEL	HOURS ESTIMATE [IN THOUSANDS]	STANDARD ERROR [IN THOUSANDS]	PERCENT STANDARD ERROR
ATRAS 92	1470.9	131.1	8.9
BAC 111	234.9	20.7	8.6
BALKESTRUPP	22.6	3.6	16.1
BAEGLIN 206	50.2	6.5	12.9
BEECH 100	681.9	270.5	39.7
BEECH 17	436.6	51.2	11.7
BEECH 18	6147.0	373.7	6.6
BEECH 200	149.6	34.4	23.0
BEECH 23	4064.7	572.0	14.1
BEECH 33	2934.0	317.6	10.8
BEECH 35	18277.2	1038.3	5.7
BEECH 36	886.3	179.4	20.2
BEECH 45	1707.4	86.2	5.0
BEECH 50	1737.6	68.7	4.0
BEECH 55	3553.0	583.7	16.4
BEECH 56	100.7	10.8	10.8
BEECH 58	662.6	85.4	12.9
BEECH 60	250.4	56.7	22.6
BEECH 65	572.4	99.1	17.3
BEECH 80	905.1	60.6	6.7
BEECH 90	1627.5	200.7	12.3
BEECH 95	1532.1	86.9	5.7
BEECH 99	1510.6	167.4	11.1
BELL 204	504.8	6.7	1.3
BELL 205	186.1	43.7	23.5
BELL 206	3094.4	672.1	21.7
BELL 212	240.8	42.4	17.6

TABLE 2-16. GENERAL AVIATION AIRFRAME HOURS BY AIRCRAFT MANUFACTURER AND MODEL - CY 1977
 (3 of 11)

MANUFACTURER / MODEL	HOURS ESTIMATE ^a [IN THOUSANDS]	STANDARD ERROR (IN THOUSANDS)		PERCENT STANDARD ERROR
BELL 47	7364.6		779.4	10.6
ELANCA 11	1365.0		39.5	2.9
ELANCA 1613	476.7		26.2	5.5
ELANCA 1619	469.4		19.5	4.2
ELANCA 17	878.5		99.2	11.3
ELANCA 7	11308.0		633.5	5.6
ELANCA 9	165.1		19.4	11.8
EMBRAER ARJ2	218.2		81.3	37.2
BOEING 707	929.3		19.1	2.1
BOEING 670	671.2		17.3	2.6
SCOTTING 727	1332.8		163.0	12.2
SCOTTING 75	8771.1		456.4	5.2
BOEING 17	133.0		0.1	0.0
BOLIBURS 15	120.9		22.8	18.9
GRUMMAN 12	93.1		6.2	6.6
EWST SPPLIT 77	66.2		4.4	6.6
CABICACOCLIC	1.9		0.4	10.7
CESSNA 120	2235.1		188.9	8.5
CESSNA 140	6813.3		426.5	6.3
CESSNA 150	26717.2		3899.6	10.6
CESSNA 170	7101.4		795.4	11.1
CESSNA 172	30615.8		3532.9	11.5
CESSNA 175	3352.1		350.8	10.5
CESSNA 177	2636.2		495.6	16.5
CESSNA 180	8138.9		1013.5	12.5
CESSNA 182	40734.3		8916.5	21.9
CESSNA 185	1994.1		1020.1	51.2

TABLE 2-16. GENERAL AVIATION AIRFRAME HOURS BY AIRCRAFT MANUFACTURER AND MODEL - CY 1977
 (4 of 11)

MANUFACTURER / MODEL	HOURS ESTIMATE [IN THOUSANDS]	STANDARD ERROR [IN THOUSANDS]	PERCENT STANDARD ERROR	
			HOURS ESTIMATE [IN THOUSANDS]	STANDARD ERROR [IN THOUSANDS]
CESSNA188	1927.0	253.2	13.1	
CESSNA190	223.3	9.2	4.1	
CESSNA195	1381.3	97.8	7.1	
CESSNA205	672.8	43.1	6.4	
CESSNA206	2879.3	688.6	17.6	
CESSNA207	546.2	116.7	21.4	
CESSNA210	5290.9	623.2	11.8	
CESSNA305	993.5	118.0	11.9	
CESSNA310	6247.6	679.5	10.9	
CESSNA320	1068.6	131.5	12.3	
CESSNA336	198.1	7.4	3.8	
CESSNA337	1500.2	197.7	13.2	
CESSNA340	528.7	138.6	25.5	
CESSNA401	731.8	49.0	6.7	
CESSNA402	1293.1	246.7	19.1	
CESSNA404	16.7	2.3	14.0	
CESSNA411	695.7	77.3	11.1	
CESSNA414	445.7	37.6	8.4	
CESSNA421	1356.1	213.3	15.7	
CESSNA500	462.7	105.9	22.9	
CESSNA750	150.9	23.0	15.2	
CESSNAUDC96	85.3	3.7	4.4	
CIRRUS185	42.0	7.4	17.7	
COASTAL46	154.6	17.9	11.6	
CURTIS46	880.4	51.2	5.8	
CURTISJP	15.9	0.3	2.0	
CURTISQW	55.1	9.6	17.4	

TABLE 2-16. GENERAL AVIATION AIRFRAME HOURS BY AIRCRAFT MANUFACTURER AND MODEL - CY 1977
 (5 of 11)

MANUFACTURER / MODEL	HOURS ESTIMATED [IN THOUSANDS]	STANDARD ERROR [IN THOUSANDS]	PERCENT STANDARD ERROR
Cessna 172	569.7	47.9	8.4
Cessna 210	842.1	64.8	5.3
Cessna 240	1074.4	97.6	9.1
Cessna 340	401.6	51.7	12.9
Cessna 440	771.9	107.3	13.9
Cessna 5213	287.6	11.3	3.9
Dart C	32.7	2.1	6.5
De Hav DHC2	2329.4	90.5	3.9
De Hav DHC3	122.8	5.2	4.2
De Hav DHC6	1327.1	356.2	26.8
De Hav DHC82	273.3	10.8	3.9
Douglas A26	147.9	7.4	5.0
Douglas DC3	13684.6	2275.4	16.9
Douglas DC4	1863.5	115.0	6.2
Douglas DC6	3460.4	189.0	5.3
Douglas DC7	10274.2	53.1	5.2
Douglas DC8	1731.9	50.8	2.9
Douglas DC9	1838.0	461.9	25.1
Instrument 28	265.8	60.0	22.6
Panett 16B	50.3	5.1	10.1
Pac Child 24	539.6	38.1	7.1
Pacific DC119	129.7	2.2	1.7
Pacif Dp27	550.9	78.2	14.2
Pacif Dp1100	206.7	27.0	13.1
Pacif Dp62	373.5	15.7	4.2
Glasp 201	12.1	2.2	18.4
Glasp 301	83.9	8.9	10.6

TABLE 2-16. GENERAL AVIATION AIRFRAME HOURS BY AIRCRAFT MANUFACTURER AND MODEL - CY 1977
(6 of 11)

MANUFACTURER / MODEL	HOURS ESTIMATE [IN THOUSANDS]	STANDARD ERROR [IN THOUSANDS]	PERCENT STANDARD ERROR
CARTERS 271	63.8	10.9	17.2
CRUZER NG21	765.5	110.6	14.4
CRUZER NG4	402.5	60.0	14.9
CRUZER NG73	262.8	15.9	6.0
CRUZER NG76	64.7	3.1	4.6
CRUZER VAA1	1459.3	112.0	7.7
CRUZER VAA5	1119.4	317.8	28.4
CRUZER VG1159	986.2	77.6	17.8
CRUZER VG159	1079.5	90.3	8.4
CRUZER VG164	2488.4	283.4	9.9
BELLIC H295	121.1	18.4	11.9
BEETLE A391	58.0	4.3	8.0
BILLIBURW12	2410.8	285.4	11.9
BOLYPGHP137	47.1	10.7	22.6
BUGGIES269	1610.8	189.6	11.8
BUGGIES365	352.7	49.5	14.0
BURSLTDH104	263.5	40.5	15.4
BURSLTDH114	982.1	72.3	7.4
BURSLTDH125	528.6	82.8	15.4
BUTTER B2	131.1	9.3	7.1
CHINCE240	137.9	5.9	4.3
ISRAELI1121	490.8	35.7	7.3
ISRAELI1123	28.3	3.8	13.5
ISRAELI1124	11.7	1.0	8.1
JOHNSONDA15	122.0	4.3	3.5
LATIFP10	129.6	63.8	49.2
LIKA 23	332.4	9.4	2.8

TABLE 2-16. GENERAL AVIATION AIRFRAME HOURS BY AIRCRAFT MANUFACTURER AND MODEL - CY 1977
(7 of 11)

MANUFACTURER / MODEL	HOURS ESTIMATE (IN THOUSANDS)	STANDARD ERROR (IN THOUSANDS)	PERCENT STANDARD ERROR
LEAP 24	589.5	92.0	15.6
LEAP 25	346.5	33.8	9.7
LEAP 35	88.0	12.9	14.7
LET L13	79.8	13.8	17.3
IMMEDIATE 12A	222.7	12.5	5.6
IMMEDIATE 1329	612.2	82.1	13.4
IMMEDIATE 18	802.3	72.3	9.0
IMMEDIATE 168	493.3	35.9	7.3
IMMEDIATE PV1	105.5	13.6	12.9
IMMEDIATE 33	312.1	18.2	5.8
LUSCCCR8	5092.4	358.9	7.0
MARTIN B04	1397.5	44.4	3.2
MARQUE 64	263.6	32.7	12.4
MARQUE 65	81.3	12.2	15.0
MC CULLINAN J2	7.1	0.9	12.9
MOLISIPUNAK	190.5	4.2	2.2
NEFF SCTV	109.2	3.6	3.3
RECORPSO	104.6	8.8	8.4
RESETTA 18	162.5	12.6	7.7
ROBERTA 20	7195.3	578.3	8.0
ROBERTA 22	22.8	2.0	8.7
ROBERTA 150	64.4	3.5	5.4
RECHT 15205	38.6	3.0	8.5
RETSBESIAU2	625.6	86.8	13.9
SULFICD16	147.4	37.0	25.1
WABE B25	247.4	21.4	8.7
WABE F51	186.5	22.4	12.0

TABLE 2-16. GENERAL AVIATION AIRFRAME HOURS BY AIRCRAFT MANUFACTURER AND MODEL - CY 1977
(8 of 11)

MANUFACTURER / MODEL	HOURS ESTIMATE [IN THOUSANDS]	STANDARD ERROR [IN THOUSANDS]	PERCENT STANDARD ERROR	
			HOURS ESTIMATE [IN THOUSANDS]	STANDARD ERROR [IN THOUSANDS]
CESSNA 172	117.0	6.9	5.9	
CESSNA 16	1763.3	56.6	3.2	
SEAL 83B	909.6	28.5	3.1	
SEAL 83B	3298.9	102.7	3.1	
SOCATA 265	97.9	10.1	10.4	
PICARRETA 6	30.9	8.0	26.0	
PICARRETA 8	3.9	0.7	17.1	
PIPER J2	101.3	10.0	9.9	
PIPER J3	12000.7	446.3	3.7	
PIPER JA	426.5	11.0	2.6	
PIPER J5	914.0	84.5	9.2	
PIPER PA12	3381.4	109.5	5.6	
PIPER PA14	375.0	93.7	26.9	
PIPER PA15	261.6	7.0	2.7	
PIPER PA16	665.4	16.8	2.5	
PIPER PA17	217.5	16.3	7.5	
PIPER PA18	6918.4	719.0	10.4	
PIPER PA20	1168.2	132.6	11.4	
PIPER PA22	11972.4	707.8	5.9	
PIPER PA23	9202.1	753.9	8.2	
PIPER PA24	8171.5	382.0	4.7	
PIPER PA25	3881.7	325.5	8.4	
PIPER PA28	34607.3	3438.5	9.9	
PIPER PA30	2955.0	150.4	5.4	
PIPER PA31	2469.4	297.0	12.0	
PIPER PA31T	70.7	11.4	16.1	
PIPER PA32	3399.6	605.3	17.8	

TABLE 2-16. GENERAL AVIATION AIRFRAME HOURS BY AIRCRAFT MANUFACTURER AND MODEL - CY 1977
 (9 of 11)

MANUFACTURER / MODEL	HOUS ESTIMATE [IN THOUSANDS]	STANDARD ERROR [IN THOUSANDS]	PERCENT STANDARD ERROR
PIPER PA34	1046.6	135.5	13.0
PIPER PA36	107.7	31.0	29.5
PITTS S1	42.2	5.4	12.7
PRATT PR61	13.3	1.0	7.7
RAVEN RX6	11.3	2.1	18.3
RAVEN 550	16.5	3.4	16.3
RAVEN 555	22.2	2.5	11.4
RAVELL112	264.4	18.4	7.0
RAVELL500	1130.1	117.0	10.4
RAVELL520	256.3	7.3	2.8
RAVELL560	673.5	68.3	10.1
RAVELL600	1536.0	137.7	9.0
RAVELL600TP	388.9	34.2	8.9
RAVELL690TP	187.3	18.1	9.8
RAVELLNA265	731.0	60.9	8.3
RYAN ST3	394.1	16.7	4.2
RYAN STA	66.0	8.0	12.1
SCHLEICHASH15	18.2	1.8	9.9
SCHLEIKE	19.0	1.4	7.5
SCHLEIKE6	63.8	6.6	10.4
SCUBAISG1	405.3	47.5	11.7
SCUBAISG2	572.0	68.5	12.0
SCUBAISG3A	19.6	1.3	6.5
SERCO C1100B	3.4	0.7	21.0
SERCO T	5.0	0.7	11.4
SERCO55	427.0	33.7	7.9
SERCO550	105.5	8.0	7.5

TABLE 2-16. GENERAL AVIATION AIRFRAME HOURS BY AIRCRAFT MANUFACTURER AND MODEL - CY 1977
(10 of 11)

MANUFACTURER / MODEL	HOUSSES ESTIMATE (IN THOUSANDS)	STANDARD HOURS (IN THOUSANDS)	PERCENT STANDARD HOURS
SIEMENS 100	439.0	29.3	6.7
SIMITH 600	560.0	320.5	56.2
SOCIAS SA310	151.3	21.3	14.1
SOCATA T5894	21.3	1.7	7.0
SPARROWHAWK	50.7	11.4	22.5
STERUS 910	310.0	17.5	5.6
STERUS 915	281.8	19.7	7.0
STERUS 919	86.2	6.3	5.0
STERUS 977	129.0	5.8	4.5
STERLING C3	234.1	53.7	22.9
SUPER C LA	140.9	9.0	6.4
SUPER C V	19.0	1.6	8.2
SPRINGSA 226	324.8	46.5	14.3
SPRINGSA 26	335.4	43.3	12.9
TCAAFHD	475.2	8.1	1.7
TCAAF119	32.8	11.4	34.8
TCAFTA	49.0	7.6	17.1
TCAFTIC	4876.0	413.7	9.2
TCAFTTF	75.2	8.1	5.5
TCAFTZ	591.7	25.5	4.3
TENCO 11A	57.8	5.2	8.9
THUNDERBIRD	4.0	1.6	40.0
TRYING	649.6	48.9	6.9
TAYTAK	34.3	2.6	7.7
UNIVAC C1	1091.0	95.4	8.2
UNIVAC 108	8118.7	189.7	8.5
UNIVAC 15	3846.3	222.7	5.8

TABLE 2-16. GENERAL AVIATION AIRFRAME HOURS BY AIRCRAFT MANUFACTURER AND MODEL - CY 1977
(11 of 11)

MANUFACTURER / MODEL	HOURS ESTIMATE (IN THOUSANDS)	STANDARD ERROR (IN THOUSANDS)	PERCENT STANDARD ERROR
YACHTS	606.3	60.6	10.0
MACO ASO	82.8	4.9	5.9
MACO 618	42.6	2.7	6.3
MACO I	49.0	5.0	10.1
MACC 8P77	512.0	21.4	4.2
MACO II	89.6	3.9	4.3
PROPL 1201	26.3	11.6	44.2
TOTAL AIRCRAFT	492261.	11988.3	2.4

TABLE 2-17. GENERAL AVIATION AIRCRAFT ON LONG-TERM LEASE BY TYPE OF AIRCRAFT AND YEAR OF MANUFACTURE - CY 1977 (1 of 4)

AIRCRAFT TYPE	1977	1976	1975	1974	1973	1972	1971	1970	1969	1968	PRIOR UNKNOWN	TOTAL
FIXED WING PISTON												
1 ENG 1-3 SEATS	21	207	142	102	491	76	1	55	127	106	369	81
EST POPULATION	D	D	D	D	D	D	D	D	D	D	C	B
% STD ERROR	0.0	0.3	0.2	0.2	0.6	0.1	0.0	0.1	0.2	0.1	0.5	0.1
% OF TYPE												
1 ENG 4+ SEATS	267	1861	1958	836	232	48	43	302	135	215	659	176
EST POPULATION	D	D	D	D	D	D	D	D	D	D	B	A
% STD ERROR	0.3	1.9	2.0	0.9	0.2	0.6	0.0	0.3	0.1	0.2	0.7	0.2
% OF TYPE												
TOTAL 1 ENG	287	2068	2100	1018	673	128	48	358	261	321	1000	257
EST POPULATION	D	C	D	D	D	D	D	D	D	D	C	B
% STD ERROR	0.2	1.2	1.2	0.6	0.4	0.1	0.0	0.2	0.2	0.2	0.6	0.1
% CP TYPE												
2 ENG 1-6 SEATS	115	182	439	216	208	28	17	38	46	44	579	73
EST POPULATION	D	D	D	D	D	D	D	D	D	D	D	D
% STD ERROR	0.7	1.2	2.8	1.4	1.3	0.2	0.1	0.2	0.3	0.3	3.7	0.5
% OF TYPE												
2 ENG 7+ SEATS	41	19	16	59	76	152	1	0	20	49	316	124
EST POPULATION	D	D	D	D	D	D	D	D	D	D	B	A
% STD ERROR	0.6	0.3	0.2	0.8	1.1	2.1	0.0	0.0	0.3	0.6	6.4	1.7
% OF TYPE												
TOTAL 2 ENG	157	201	455	278	284	180	18	38	66	85	693	197
EST POPULATION	D	D	D	D	D	D	D	D	D	D	C	B
% STD ERROR	0.7	0.9	2.0	1.2	1.2	0.8	0.1	0.2	0.3	0.4	3.9	0.9
% OF TYPE												
OTHER PISTON	0	0	0	0	0	0	0	0	0	0	46	9
EST POPULATION	A	A	A	A	A	A	A	A	A	A	C	B
% STD ERROR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
% OF TYPE												
TOTAL PISTON	464	2270	2555	1295	957	304	62	396	327	405	1939	463
EST POPULATION	D	C	C	D	D	D	D	D	D	D	B	A
% STD ERROR	0.2	1.2	1.3	0.7	0.5	0.2	0.0	0.2	0.2	0.2	1.0	0.2
% CP TYPE												

NOTE: COLUMNS AND ROWS SUMMATIONS MAY DIFFER FROM PRINTED TOTALS DUE TO ESTIMATION PROCEDURES

STANDARD ERROR		CODE
GREATER THAN OR EQUAL TO	LESS THAN	
10 %	10 %	A
10 %	20 %	B
20 %	30 %	C
30 %	40 %	D

TABLE 2-17. GENERAL AVIATION AIRCRAFT ON LONG-TERM LEASE BY TYPE OF AIRCRAFT AND YEAR OF
MANUFACTURE - CY 1977 (2 of 4)

AIRCRAFT TYPE	1977	1976	1975	1974	1973	1972	1971	1970	1969	1968	PRIOR 1968	UNKNOWN	TOTAL
FIXED WING													
TURBOPROP													
2 ENG 1-12 SEATS EST POPULATION	1	20	148	36	56	9	5	0	0	11	45	5	333
X STD ERROS	D	D	D	D	D	D	D	D	D	D	D	D	5
% OF TYPE	0.1	0.9	6.3	1.6	2.5	0.4	0.2	0.0	0.0	0.5	2.0	0.2	14.5
2 ENG 13+ SEATS EST POPULATION	0	4	4	0	0	0	0	0	47	6	69	0	109
X STD ERROS	A	D	D	A	A	A	A	A	D	D	D	D	0
% OF TYPE	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1.1	6.4	0.0	18.8
TOTAL 2 ENG	EST POPULATION	1	24	148	36	56	9	5	0	47	17	94	5
X STD ERROS	D	D	D	D	D	D	D	D	D	D	D	D	5
X CF TYPE	0.0	0.8	5.1	1.3	2.0	0.3	0.2	0.0	1.6	0.6	3.3	0.2	15.4
CHEM TURBOPROP	EST POPULATION	0	0	0	0	0	0	0	0	2	17	4	23
X STD ERROS	A	A	A	A	A	A	A	A	A	D	D	D	0
X CF TYPE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	17.4	3.6	23.1
TOTAL TURBOPROP	EST POPULATION	1	24	148	36	56	9	5	0	47	19	111	9
X STD ERROS	D	D	D	D	D	D	D	D	D	D	D	D	8
% OF TYPE	0.0	0.8	5.0	1.2	1.9	0.3	0.2	0.0	1.6	0.6	3.7	0.3	15.6

NOTE: COLUMN AND ROW SUMMATIONS MAY DIFFER FROM PRINTED TOTALS DUE TO ESTIMATION PROCEDURES

STANDARD ERROR	CODE
GREATER THAN OR EQUAL TO	-----
0%	10%
10%	20%
20%	30%
30%	D

TABLE 2.17. GENERAL AVIATION AIRCRAFT ON LONG-TERM LEASE BY TYPE OF AIRCRAFT AND YEAR OF MANUFACTURE - CY 1977 (3 of 4)

ANACRAFT TYPE	1977	1976	1975	1974	1973	1972	1971	1970	1969	1968	PATRON	NUMBER	TOTAL
PRIVATE TURBOJET													
2 HPC	0	6	14	28	12	44	0	0	23	21	194	16	361
STD ENR05	1	0	0	0	0	0	0	0	0	0	C	B	8
X OP TYPE	0.0	0.4	0.7	1.4	0.6	2.2	0.0	0.0	1.2	1.1	9.7	0.8	16.1
OTHER													
EST POPULATION	1	1	0	0	0	0	0	0	13	0	0	33	12
STD ENR05	0	0	0	0	0	0	0	0	0	A	B	C	8
X OP TYPE	0.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0	6.5	2.5
TOTAL TURBOJET													
EST POPULATION	1	12	14	28	12	44	0	0	13	23	21	227	28
STD ENR05	0	0	0	0	0	0	0	0	0	D	D	C	9
X OP TYPE	0.0	0.5	0.6	1.1	0.5	1.8	0.0	0.5	0.5	0.9	0.5	9.1	1.1
TOTAL FIXED WING													
EST POPULATION	446	2306	2717	1360	1026	357	67	409	396	446	2277	500	12308
STD ENR05	0	0	C	D	D	0	0	0	D	D	B	B	8
X OP TYPE	0.2	1.1	1.3	0.7	0.5	0.2	0.0	0.2	0.2	0.2	1.1	0.2	6.1

NOTE: COLUMNS AND ROW SUMMATIONS MAY DIFFER FROM PRINTED TOTALS DUE TO ESTIMATION PROCEDURES

STANDARD ERROR		CODE	
GREATER THAN		LESS THAN OR EQUAL TO	
0 %	10 %	A	B
0 %	10 %	A	B
10 %	20 %	B	C
20 %	30 %	C	D
30 %		D	E

TABLE 2.17. GENERAL AVIATION AIRCRAFT ON LONG-TERM LEASE BY TYPE OF AIRCRAFT AND YEAR OF MANUFACTURE - CY 1977 (4 of 4)

AIRCRAFT TYPE	1977	1976	1975	1974	1973	1972	1971	1970	1969	1968	PILOT 1960	UNIQUE 1960	TOTAL
MOTORCRAFT											0	0	0
PISTON	10	0	10	5	1	2	10	0	0	0	0	0	0
% STD ERROR	D	A	D	D	D	D	D	D	D	D	D	D	D
% CP TYPE	0.2	0.0	0.2	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
TURBINE											0	0	0
EST POPULATION	0	44	14	27	199	7	10	6	7	4	6	16	300
% STD ERROS	A	D	D	D	D	D	D	D	D	D	D	D	C
% CP TYPE	0.0	2.0	0.6	1.2	9.1	0.3	0.4	0.3	0.3	0.2	0.3	0.7	15.5
TOTAL ECOCRAFT	EST POPULATION	10	44	24	33	201	4	20	6	7	4	51	920
	% STD ERROR	D	D	D	D	D	D	D	D	D	D	D	C
	% OF TYPE	0.1	0.6	0.4	0.5	2.9	0.1	0.3	0.1	0.1	0.1	0.7	0.2
CTN2B	EST POPULATION	6	13	32	6	26	11	21	1	5	4	97	189
	% STD ERROS	D	D	D	D	D	D	D	D	D	D	D	C
	% OF TYPE	0.1	0.3	0.7	0.1	0.5	0.2	0.5	0.0	0.1	0.1	1.1	0.3
TOTAL AIRCRAFT	EST POPULATION	963	2362	2774	1396	1251	376	109	417	408	454	2375	535
	% STD ERROS	D	C	C	D	D	D	D	D	D	D	D	B
	% CP POPULATION	0.2	1.1	1.3	0.7	0.6	0.2	0.1	0.2	0.2	0.2	1.1	0.3

NOTE: COLUMNS AND ROW SUMMATIONS MAY DIFFER FROM PRINTED TOTALS DUE TO ESTIMATION PROCEDURES

STANDARD ERROR		CODE
GREATER THAN	LESS THAN OR EQUAL TO	
0 %	10 %	A
10 %	20 %	B
20 %	30 %	C
30 %		D

TABLE 2-18. GENERAL AVIATION MEAN HOURS AND ACTIVE ENGINES BY ENGINE
MANUFACTURER/MODEL GROUP-CY 1977

ENGINE MANUF/ MODEL GROUP	ESTIMATE OF ACTIVE POPULATION	PERCENT STANDARD ERROR	ESTIMATE OF PERCENT ACTIVE	ESTIMATE OF MEAN HOURS	PERCENT STANDARD ERROR
ALLIN 250C	1400	2.3	99.2	602	6.4
ANTARICCCULLI APACHEPE31	156	10.5	22.7	1450	14.5
CENT A65	810	1.1	99.1	310	4.9
CENT A75	8009	2.7	59.1	64	6.4
CENT C145	1240	10.6	61.5	55	12.1
CENT C145	274	3.4	70.2	74	14.9
CENT C145	675	3.2	72.6	55	5.2
CENT C19	226	2.2	82.4	63	6.6
CENT B105	104	6.0	77.0	121	15.1
CENT B225	1462	6.0	91.5	76	17.0
CENT D260	14413	4.6	90.4	219	16.0
CENT D300	1095	3.6	96.6	79	17.5
CENT D345	146	4.0	99.2	112	20.2
CPIR 0470	28310	1.1	97.3	386	3.0
CPIR 0520	19946	0.7	99.5	204	3.0
CPIR A670	525	6.7	50.0	102	12.0
FARQUHAR10	633	6.5	59.7	92	12.0
GE CJ610	941	2.2	94.3	114	4.7
JACOB 150	125	4.1	22.9	62	11.7
LTC 0145	433	6.2	50.3	69	10.4
LTC 0235	5037	7.1	45.7	71	12.0
LTC 0290	2390	6.7	72.9	103	10.7
LTC 0320	31037	1.7	94.6	222	10.7
LTC 0360	20198	1.4	96.1	207	10.7
LTC 0435	1175	6.1	73.9	216	10.7
LTC 0460	10114	2.1	92.7	227	10.7
LTC 0540	12113	1.2	97.1	166	10.6
LTC 0541	985	1.2	99.3	100	10.6
LTC Rego	276	7.7	40.6	122	10.7
PJA J75	753	0.9	100.0	323	10.0
PJA P75	2210	0.7	99.3	750	10.2
PJA P76	129	2.7	98.2	1050	10.4
PJA R1340	3600	4.2	83.4	328	10.4
PJA R905	2981	3.7	66.1	368	10.4
WRIGHT1920	330	6.4	70.4	115	10.5
ALL ENGINES	209502	0.0	87.1	216	2.4

NOTE: ENGINE MANUFACTURER/MODEL GROUPS FOR WHICH SEPARATE ESTIMATES ARE NOT AVAILABLE ARE NOT LISTED IN THE TABLE, BUT ARE INCLUDED IN THE "ALL ENGINES" ESTIMATES.

APPENDIX A1. FIRST MAILING COVER LETTER

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

WASHINGTON, D.C. 20591

February 15, 1978



Dear Aircraft Owner:

The Federal Aviation Administration is gathering statistical information on the use and characteristics of the general aviation fleet. The enclosed survey questionnaire replaces a form previously mailed annually to all general aviation aircraft owners. This new survey is being mailed to a random sample of only approximately fifteen percent of GA aircraft owners each year, so that it is unlikely that you will be selected for the survey every year.

Survey methods for collecting general aviation activity data will save money for both the federal government and the public. Not only will there be a reduction in the volume of data collected, but also more reliable estimates are expected as a result of statistical sampling.

It is possible that more than one of your aircraft may be selected. When this happens, you will find a separate questionnaire provided for each aircraft sampled. Please answer all questions for the aircraft identified. If you cannot determine precisely an answer to a question, please make your best estimate. If your aircraft is operated principally by another (leased, etc.), please obtain the necessary information from the operator or forward these materials to that person or firm for completion.

Because this survey is based on a sample of GA aircraft, your response is especially important to the accuracy of the results. The data gathered from this survey will be used only to produce summary statistics and not to disclose individual operations nor to make corrections to your aircraft records.

Please return this questionnaire in the enclosed self-addressed, postpaid envelope within 10 days. A prompt response will eliminate the need for additional follow-up contacts and thus enhance the savings associated with the survey. A high response rate in this survey will ensure the continued use of statistical sampling methods in lieu of a mandatory reporting system. We appreciate your cooperation.

Sincerely,

A handwritten signature in black ink, appearing to read "F. C. Osgood".

F. C. OSGOOD
Chief, Information & Statistics Division

Enclosure

APPENDIX A2: SECOND MAILING COVER LETTER

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

WASHINGTON, D.C. 20591

March 22, 1978



Dear Aircraft Owner:

In February, the Federal Aviation Administration sent aircraft owners a questionnaire as part of its program to gather statistical information on the use and characteristics of the general aviation fleet.

You were one of the aircraft owners selected at random to receive a questionnaire. As of this date, we have not received a response from you. In the event the survey questionnaire has been lost or misplaced, another copy is enclosed for your convenience in responding. A prompt response will eliminate the need for additional follow-up contacts. If you have already responded, please disregard this notice. We appreciate your cooperation.

Sincerely,

A handwritten signature in cursive ink, appearing to read "F. C. Osgood".

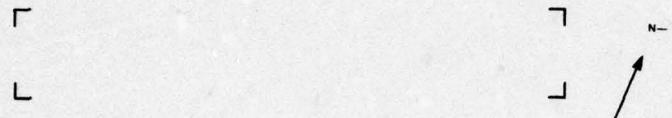
F. C. OSGOOD
Chief, Information & Statistics Division

Enclosure

APPENDIX A3. SURVEY QUESTIONNAIRE

1 CONTROL NUMBER	DEPARTMENT OF TRANSPORTATION—FEDERAL AVIATION ADMINISTRATION GENERAL AVIATION ACTIVITY and AVIONICS SURVEY (As of December 31, 1977)	Form Approved OMB No 04-R0185
<p>This report is authorized by Section 311 of the Federal Aviation Act of 1958, as amended. While you are not required to respond, your cooperation is needed to make the results of this survey comprehensive, accurate and timely. Information collected in this survey will be used for statistical purposes only and not to disclose individual aircraft activity.</p>		<input type="checkbox"/> "X" here if you operate your aircraft principally as an air carrier (under FAR 121 or 127). If so, DO NOT complete remainder of form. However, please return to address shown below.

3 AIRCRAFT CHARACTERISTICS



INSTRUCTIONS: Please answer questions for the aircraft identified at right.
Mail the completed questionnaire in the enclosed postage paid envelope to

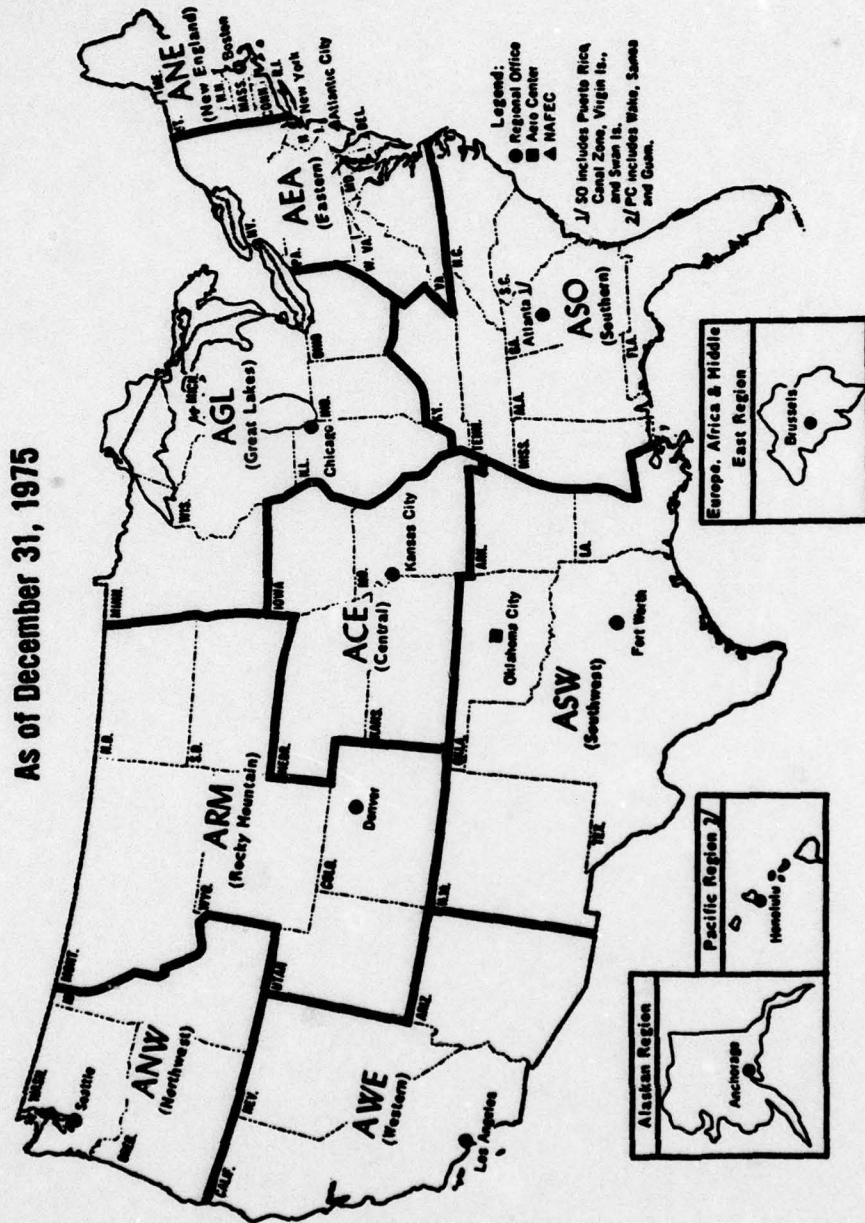
Federal Aviation Administration
P.O. Box 28045
Oklahoma City, Oklahoma 73126

<p>4. What were the total lifetime airframe hours as of December 31, 1977? _____</p>	HOURS		
<p>5. Was aircraft flown in Calendar Year 1977? 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No (Skip to question 9)</p>			
<p>6. HOURS FLOWN DURING CALENDAR YEAR 1977</p> <p>a. If you did not own aircraft for entire year, "X" box → <input type="checkbox"/> and include previous owner's hours in your estimates.</p>			
<p>EXECUTIVE—Corporate flying with professional crew b. _____ BUSINESS—All non-executive flying for business reasons c. _____ PERSONAL—Individual flying for personal reasons d. _____ AERIAL APPLICATION—Agriculture, health, forestry e. _____ INSTRUCTIONAL—Flying with or under supervision f. _____ of a flight instructor AIR TAXI—All Part 135 passenger, cargo, and mail g. _____ operations, including charter INDUSTRIAL/SPECIAL—Patrol, survey, photo, hoist, etc.—Other than Part 135 h. _____ AIRCRAFT RENTAL BUSINESS—Commercial flying club, leased and rental aircraft activity i. _____ OTHER—R&D, government, air show, sales, parachuting, etc. j. _____</p>			
<p>7. Was this aircraft flown on an Instrument Flight Plan in 1977? 1 <input type="checkbox"/> No 2 <input type="checkbox"/> Yes → Hours flown →</p>			
<p>8. Estimate of this aircraft's average rate of fuel consumption (gal./hr.) during 1977 _____</p>			
<p>9. State (Abbreviation) in which aircraft was based as of December 31, 1977 _____</p>			
<p>10. Was this aircraft on long-term lease during 1977? (Principal use for three months or more by operator other than owner.) 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No</p>			
<p>Continue with Question 11</p>			
<p style="margin: 0;">THANK YOU FOR YOUR COOPERATION</p>			

FAA Form 1800—54 (5-77)

APPENDIX B.

FEDERAL AVIATION ADMINISTRATION REGIONS AND REGIONAL OFFICES



FAA Air Traffic Activity Calendar Year 1977, (March, 1978), p. 10.

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